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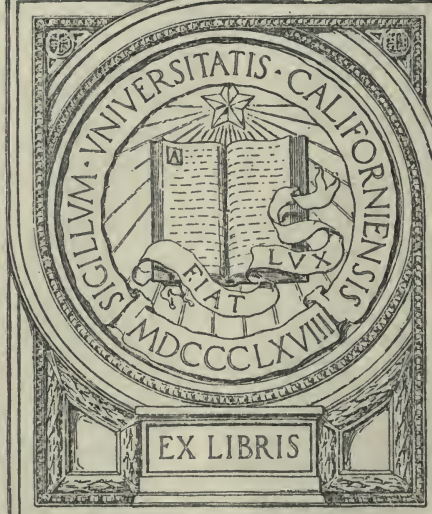

A TREATISE

OF

PRACTICAL INSTRUCTIONS

IN THE

MEDICAL AND SURGICAL USES

OF

ELECTRICITY

INCLUDING

INSTRUCTIONS IN ELECTRICAL DIAGNOSING

AND A NEW METHOD OF

GENERAL AND LOCAL ELECTRIZATION.

ALSO CLINICAL EXPERIENCES OF FIFTEEN YEARS.

WITH ILLUSTRATIONS.

BY

S. E. MORRILL, M. D.,

KALAMAZOO, MICHIGAN.

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To My Son,

J. F. MORRILL, M. D.,

ELECTRICIAN,

OF EUREKA, CALIFORNIA,

This Treatise Is Dedicated,

Confident that he will continue the investigation of the wonderful power of electricity, as it relates to health and disease.

S. E. MORRILL, M. D.

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PREFACE.

This book is published for the purpose of diffusing, in a more extended form than can be obtained by any other means, the therapeutic value of electricity, when the application is scientifically and practically employed. We present a *new and complete system* of *medical electricity*. This system of practice involves new principles in physiology and diagnosing diseases, and a new method of curing the same. Acute or inflammatory diseases are cured in from three to five treatments, of an hour each; chronic diseases yield with from ten to fifty, according to the length of time the disease has been standing. The cure is permanent, because the circulation is equalized, the blood purified, the vital or nervous forces restored, muscles toned, liver and all the excretory organs aroused and stimulated to a healthy action. These assertions we will prove to any who will investigate. We challenge the whole medical faculty to test this new method of curing diseases with electricity, and if the directions are followed as laid down in this treatise, they can then prove whether it be true or false. We have read many works on this subject, and some truths have been written, but the most of these are incomprehensible to the medical reader, and how much more so to the masses? The author designs to present a treatise as void of technicalities as possible, so concise and simple that both the physician and invalid can practically demonstrate its truths, or prove its defects.

CONTENTS.

CHAPTER I.

Questions and Answers, on the different subjects treated upon in this volume.

CHAPTER II.

Electro-Therapeutics.

CHAPTER III.

Magnetism and Electricity.

CHAPTER IV.

Is Electricity Life?

CHAPTER V.

Do Medicine and Electric Treatment Harmonize?

CHAPTER VI.

Salt—Its Benefits in Electrical Treatment.

CHAPTER VII.

Physical Diagnosing.

CHAPTER VIII.

Electrical Diagnosing. Instructions.

CHAPTER IX.

Remarks on General Treatment.

CHAPTER X.

General Faradization. Instructions.

CHAPTER XI.

Batteries and Instructions--How to keep them in order.

CHAPTER XII.

Blood Currents, and the Source of their Circulation.

CHAPTER XIII.

DISEASES OF CHILDREN.

Instructions for Treating Croup, Thrush, Constipation, Diarrhœa, Dysentery, Atrophy of Infants, Cholera Infantum, Bronchitis, Pneumonia, False Croup or Asthma, Indigestion, Diphtheria.

CHAPTER XIV.

SEXUAL DISEASES OF WOMEN.

Causes of Poor Health of Girls, Metritis, Hysteria, Abscesses of the Labia, Menorrhagia, Leucorrhœa, Morbid Growths, Ascarides, Strictures, Ovarian Tumors, Fibrous Tumors, Dysmenorrhœa, Malignant Ulcers, Vaginal Fistula, Nymphomania, Uterus, Dropsy of the Uterus, Vulvitis, Ulceration of the Uterus, Moles, Hydatids, Procidentia, Prolapsus, Retroversion, Anteversion, Polypus, Amputation of the Cervix, Erectile Tumors, Prolapsus of the Vagina, Case of Adhesion of the Vagina cured.

CHAPTER XV.

SEXUAL DISEASES OF MEN.

Spermatorrhœa, Spermatocele, Prostatitis, Hydrocele, Impotency, Satyrasis, Bubos, Gonorrhœa.

CHAPTER XVI.

BLOOD POISON.

Spider and Snake Bites, Scrofula, Cancer, Small Pox, Skin Diseases, Salt Rheum, Erysipelas, Poison from Ivy, Rhus, Arsenic, Strychnine, Opium, Cantharides, Tobacco, Hydrophobia, Asphyxia.

CHAPTER XVII.

Pyæmia and remarks on President Garfield's sickness.

CHAPTER XVIII.

Extraction of Foreign Bodies by Magnets.

CHAPTER XIX.

Baths, Improvised Instruments.

CHAPTER XX.

DISEASES OF THE HEAD AND THROAT.

Catarrh, Congestive Headache, Goitre, Quinsy.

CHAPTER XXI.

NERVOUS DISEASES.

Insomnia, Stammering, Lock Jaw, Rheumatism, Paralysis, Neuralgia, Lumbago, Sciatica, Insanity.

CHAPTER XXII.

Fevers, Inflammations, Purpura Hemorrhagica.

CHAPTER XXIII.

Thoracic Cavity, Heart Disease, Consumption, Asthma Pleurisy, Pneumonia.

CHAPTER XXIV.

Kidneys, Bright's Disease, Chronic Cystitis, Retention of Urine, Incontinence of Urine.

CHAPTER XXV.

ABDOMINAL DISEASES.

Dyspepsia, Painters' Colic, Bilious or Cramp Colic, Intrososception, Cholera; Chronic Diseases of the Stomach, Liver and Bowels; Constipation, Strictures of the Rectum, Worms, Hemorrhoids or Piles, Prolapsus of the Anus, Chronic Diarrhœa, Hypochondria, Dropsy, Jaundice, Dysentery; Liver Diseases, acute and chronic; Obesity, or Excessive Fat. [Pl.]

CHAPTER XXVI.

Diseases of the Eye, Conjunctiva, Lachrymal Duct.

CHAPTER XXVII.

SURGERY.

Abcess of the Antrum, Talipes Equmus, Fractures, Dislocations, Bursæ, Boils, Carbuncles, Primary Syphilis, Burns' Scalds, Rickets, Ulceration, Sloughing, Chilblains.

CHAPTER XXVIII.

Extracts from other writers.

A Treatise Whose Basis is Truth.

*"Truth always triumphs. Truth is God's eldest child. She has come down through the ages undefiled, her hands stainless; she asks no mask, seeks no hiding place, for she is strong, brave and deathless as divinity."**

We as true physicians want the living vital truth, with no limitation to keep back progress. The greatest error of the present is to grasp and hold theories of the past, to the exclusion of those of to-day, with the idea that old opinions must be continuous and unchanging. When we look at nature we learn a different lesson; she is ever changing and reproducing; so we must let the inspiration of to-day quicken our feelings into the impregnation of new thoughts, new theories and new truths, and let our observation and research be such, that the development and birth of these shall share the fate of all great and useful sciences. The old idea that truth, if new, must be throttled at its birth, or in its infancy, is passing away as brighter intellects come upon the stage of action. So this new manifestation of an old truth will live and will be hailed as the desideratum of the age, a new era in medical practice—a star of hope to many a despondent suffer-

*Mrs. H. F. M. Brown.

er. We might as well expect to hold and chain the lightnings that flash through the vaulted heavens, or quiet the thunderings that arise therefrom, as to now stop the onward progress of electro-therapeutics.

The poet says:

"Electricity warms in the sun, refreshes in the breeze,
Glows in the stars and blossoms in the trees;
Lives through all life, extends through all extent,
Spreads undivided, operates unspent;
Breathes in our souls, informs our mortal parts,
As full, as perfect in vile man that mourns,
As the rapt seraph that adores and burns.
It claims all high and low, all great and small,
It fills, it bounds, connects and equals all."

A TREATISE ON ELECTRICITY.

CHAPTER I.

QUESTIONS AND ANSWERS IN ELECTRO-THERAPEUTICS.

Q. Why is general treatment necessary?

A. Because constitutional diseases need constitutional treatment in connection with local stimulation to the diseased parts. Electricity arouses the whole nervous system, and by that means changes the circulation, stimulates absorption, and brings the whole system under its influence, to help remove the disease, just as ten men can do a piece of work in much less time than one.

Q. Will an electrical diagnosis find to a certainty the cause of the constitutional disturbance?

A. Yes. If the operator understands his business he need *never* make a mistake in finding the cause, and all its pathological symptoms. It points direct to the disease, and when the cause is known, the cure is certain with electricity.

Q. Why is it that all who take electrical treatment are not permanently benefited?

A. If the electrical currents were scientifically administered it would *always* be permanent, and the patient would gain more rapidly after they were through than while being treated.

Q. How were the treatments given in the past?

A. Generally through the operator. Sometimes from the feet or hands, diffusing the current too much.

Often the treatments were too short to gain tonic effects, thus only stimulating the system, the same as when taking quinine, and as soon as the stimulus is gone the disease has the ascendency.

Q. Why should not treatment be given through the operator?

A. Because the current to be felt, has to be of so strong a tension, that it becomes superficial, and does not reach nerve centers, and if the operator is diseased, the patient by a magnetic law will absorb his disease.

Q. Should the currents be applied very far apart?

A. No. They should be concentrated, and not diffused, to give tonic results. When one pole is applied to the feet, the other to the body, it only stimulates for the time.

Q. Does the above application ever permanently cure disease?

A. Yes, if the disease is not very chronic; but the benefit is not as *certain* to be permanent, as when the poles are in close proximity, and run in the right direction.

Q. Why do we treat from the nerve centers?

A. For the purpose of running the current from the fountain head to where it empties, or from the nerve centers to the peripheral nerves into the capillary circulation, and by that means discharge through the skin the effete matter.

Q. Why not run the currents from the peripheral nerves?

A. Because it takes too much motive power to run electricity up hill; it is much easier to run the *refuse* down. To run the currents from the hands or feet it takes strong tension currents, and that stimulates muscles, and therefore is only of temporary benefit, besides it causes the muscles to feel as if overworked.

Q. Is the above the effect of the six and nine current batteries?

A. Yes, if the tension currents are used. But to purify the blood we must use less tension and more quantity, and the currents must then run from the nerve centers.

Q. How can we gain quantity when using tension batteries?

A. By wetting the sponges in salt water, and connecting only with the primary or A and B posts, which is the electro-galvanic current.

Q. Why is this a better current?

A. It has more allotropic or chemical action on the blood.

Q. Should all diseases be treated to purify the blood?

A. Nearly all, in the western climates, and more or less in all climates.

Q. Which current or pole snould be used at the nerve centres of the spine?

A. The positive or A post of the primary, the B or negative should be at the peripheral nerves.

Q. Why should the negative be at the peripheral nerves?

A. Because it is the absorbing current, and will take up the impurities as fast as the positive drives it to the surface, the same as in *electro-plating*, the silver is deposited at the negative pole.

Q. Which current has the most magnetic power?

A. The secondary; the primary is the galvanic, it gets its power from chemical action, the secondary from the magnet by induction.

Q. Why is it better to use plates than sponges for the application?

A. They diffuse the current, allowing more quantity without causing pain or contracting muscles, and

absorb more impurities, being covered with heavy cloth.

Q. Should sponges be used on different patients?

Q. Never, unless thoroughly cleansed.

A. Why should the positive current be used on the mucous surfaces?

A. Because it is an acid, and the mucous membrane is an alkali, and when these two elements come together they effervesce and cause an electric action, that produces more natural secretions.

Q. Why should the negative be used on the skin, while the positive is applied on the mucous surfaces?

A. Because the negative is an alkali, the skin is acid, and the response is the same as described for the positive.

Q. What medical properties has salt?

A. It is a stimulant, a tonic, and a great eliminator; it is the best remedy we have, for stimulating the glands. See chapter on salt.

Q. Does salt intensify the primary current?

A. Yes. It gives just enough intensity to overcome the resistance necessary, so as to use the primary current. It helps us to reach deep nerves and glands that cannot be reached without it. It is important, because in this way we can purify the blood by stimulating the liver, and all the excretory organs.

Q. Can other remedies be applied externally?

A Yes; and the medicine is much sooner assimilated, as for instance, if Atropia or Belladonna is applied on nerves leading to the eye, and electricity used, its pupil will immediately expand. Also, if Digitalis is applied over the heart, its effect is immediate.

Q. Should large doses of medicine be used when taking electricity?

A. No; for the reason that electricity intensifies the nerves, and there is danger of their taking up so much of

the drug as to produce poisonous effects. I have proven this beyond a doubt. Refer to chapter on medicines.

Q. Does electricity ever produce bad effects without medicine?

A. Never; if used with good common sense.

Q. Does electricity ever cause an aggravation?

A. Yes; if the blood is impure and the glands are clogged; but if given every day, it reduces one day that which was aggravated the day before. It arouses the system, similar to taking cathartics; as soon as thrown off the patient is better.

Q. If other adjuncts are used is the aggravation less?

A. Yes; if a cathartic is given with the third treatment and the fourth day a vapor or electro-thermo bath. there will be no aggravation to speak of. But if neither of the above adjuncts are used we have fever and stirred up bilious feeling, accompanied with pain in the region of the diseased part, at the third and seventh treatment.

Q. Will electricity benefit the mental condition of patients?

A. Yes; hypochondriacs and hysterical patients will notice benefit by the third treatment, as the electricity arouses vital action.

Q. Will electricity cure insanity?

A. Yes; if the cause is removed. See insanity.

Q. Can unbalanced phrenological organs be treated so as to be restored?

A. Yes; especially if the fifth pair of nerves are treated; for instance if a child or person has kleptomania, treat with a light current to the organs of secretiveness and acquisitiveness.

Q. Can a healthy organ by irritated so as to affect the dreams?

A. Yes; if any organ is treated before retiring. For instance, I treated the organ Philoprogenitiveness on a

lady's head. The next morning her husband said, "you need not treat that organ again, my wife had twins last night." If Sublimity had been treated the dreams would partake of the grand and beautiful.

Q. Is it necessary to treat the hands or feet each time?

A. No; if the current is applied to the nerve centers, it will be felt in the feet or hands if the nerves are not clogged.

Q. If the limbs are diseased, are they benefited when treated locally?

A. No; not in the same proportion as when run from the spine through; by putting the positive current in the rectum, the negative one to the spine or sacral nerves, it will be felt at the feet more than when applied locally, and the benefit is greater.

CHAPTER II.

ELECTRO-THERAPEUTICS.

The progress of electro-therapeutics is very slow, and at times seems to almost pass out of the minds of the medical profession, as they do not interest themselves enough to know anything of its true value; for the fact is it takes labor to make the investigation, and they find the subject is more intricate and extensive than can be grasped in a day or a year. For this reason and many others, as well as a lack of energy, they neglect to follow it up, and are prone to look upon it with distrust.

The eminent men in the medical profession are too busy, and those whose time is not all taken up with their professional duties are *too wise;* they are not aware that there is any knowledge outside their individual brains, therefore this important adjunct has been left in the hands of charlatans, making it unpopular to many. Notwithstanding the above, their success has been so great as to lead many thinking minds to an investigation of the truths of electro-therapeutics, and they come to the conclusion that it is of more importance than drugs alone. As drug medication is losing ground, it is necessary for the medical profession to awaken to the fact, and "grasp the plow and not look back."

Some are reluctantly trying to investigate, but the way is so hedged up with theories, and our electrical works, many of them, such a conglomeration of big words and technicalites, without practical bearing

on its true value, or proper instruction for making the application, that men of science are discouraged, because in their use of it they see no permanent benefit.

The demand for other theories spring from the inefficiency of the medical profession, for all classes of prevailing disease. If care is taken in diagnosing, a proper selection of remedies will control acute or inflammatory diseases. But chronic obstructions are seldom removed by the present system of medication, only palliated for a time, so as to reappear with more vigor in some other form. And when epidemic diseases are raging with violence, the profession seem paralyzed. They do not seem to know where to look for a panacea that will help them in their dilemma. Is it not possible and true that a large majority of both epidemic and prevailing acute and chronic diseases, are caused by the impoverished, poisonous, and vitiated state of the blood? and, as the beneficial effects of drugs depend upon the vital action of the stomach, why depress the nervous forces still more, by drug medication, until the vital powers are aroused by electrical treatment, as then small doses of medicine will be assimilated, and success will be the result. "Through the vital action of electricity pains vanish, obstructions are removed and the vital current is sent bounding through the entire frame, dispensing health and strength to the body and vigor to the brain."

A deficiency of the electrical powers of the body, both the vascular and nervous system, can be resupplied by artificial means precisely as we go to the fire to warm ourselves when cold.

I have studied this not as a force of nature in all its wonderful powers, as applied to mechanics, or into its scientific researches, for the subject is too extensive; it would take more than a lifetime for its investigation.

I studied medicine for three years, and it was supposed that I knew enough to take life into my hands, and try to throttle death by receiving a diploma; but I have studied electricity fifteen years, its practical application to the prevailing disease, and claim to know but an infinitesimal part of this wonderful subject, yet I think I have learned enough to give some instruction and my experience in the matter so that others can make the application successfully, and in time give their experience to the world in a more concise and scientific manner.

Those who follow the directions as laid down in this work can benefit nine out of every ten patients, and cure the same proportion, if the patients can be held long enough to eradicate the disease. The only difficulty is, as soon as the patients feel better and are able to attend to business or household affairs, they stop the treatment; whereas if they would continue it until the blood was entirely free of its effete matter, it would be still more permanent. But we as physicians cannot control these conditions, and whether we will or not our shoulders have to bear the blame. I have experimented with and without using remedies; either way it is a success, provided the doses are small. It is probably better to use mild remedies, if for no other purpose than to hold the patient. The people have been drugged for so long they cannot conceive how anything can cure disease unless taken by the mouth, or by hypodermic injections or pads. Personally I have used nothing but electricity for fifteen years, and have positive knowledge of its power to keep the blood pure, and the nervous system strong, relieve all pain and remove unpleasant feelings. If electricity will do this and that with only perhaps one treatment a month on an average, will it not with the proper application, allow

us to live to the age of the patriarchs of old, and to enjoy life as when younger. I know it will keep the teeth firm and healthy, and the hair soft and its original color, the skin soft, the circulation as good as when young.

The question is often asked, how can electricity purify the blood? I answer, by a chemical change; on the same principle that thunder and lightning purify the air by causing combustion, and burning up the impurities. What does nature do when the glands are clogged and she cannot get rid of the heavy load? she causes a fever; if the system is strong it will be an active one; if overloaded it is of a low form, and in this she makes a desperate effort to burn up the refuse, and would often do it if some doctor did not come in with strong remedies and deplete the system still more instead of helping nature in her efforts.

We would not think it good judgment if a horse had a greater load than it could carry, to load him still more, but would expect to hitch another horse to the load and by this means lend a helping hand.

We do not by any means condemn the use of remedies in fevers, or any other disease, but it is much better when there is a low form of fever, to first vitalize the system with a few electrical treatments, and then if the indicated remedy is given, disease is more certain to be controlled.

We want a remedy that adapts itself to the vital wants of the system, and electricity is a remedy that when properly applied, leaves no injurious effects, like those so often produced by poisonous drugs.

A physician or surgeon, to-day, might as well be without his Bistoury as his battery, and ought to use it as practically; the correct and proper way of using it has not been understood, but many have undertaken its use with limited experience and no judg-

ment, and consequently have made great mistakes and brought its principles into disrepute. Notwithstanding all, this agent is God-given, and should no longer be ignored by the medical profession. It has too long been left in the hands of the uneducated, and physicians should buckle on their armour, and take from this class of mountebanks this truly wonderful therapeutic agent, and apply it as humanity and science demand. "As time rolls on, and prejudice after prejudice gives way, and one innovation succeeds another, the American people are becoming reconciled to the fact that innovation constitutes a part of the immutable operations of nature, and instead of repulsing every new discovery, and crying out 'humbug' and 'collusion,' making those who harbored it either ashamed of their dullness of apprehension or their obstinacy, an intelligent community is ready to give a candid and respectful hearing to any theory in science which may be supported by even the plausibility of argument."

But for all the above, the days of medical intolerance are not yet past. There are those in the medical profession to-day who would stop all investigation—who would crush out every reform in medicine, had they the power to do so, unless it comes through the portal of their peculiar belief or school of medicine. That they do not succeed in staying progress, is evident from the great improvements already made in the healing art, and, despite their continued opposition, reform will still go on, till therapeutics as a science shall rest upon a broad and liberal basis, till schools and isms shall cease to exist, and till the entire profession shall unite in one common brotherhood and willingly investigate theories, selecting the good wherever found, and respecting the candid opinions of all men and women who are supposed to be honest and educated in their profession. We

must return to our subject: The office of an electrical physician is an important one. How necessary it is for him to understand the nature and application of an agent so important—one that can take the place of quinine, strychnine, etc.? We have nothing that will equal it as a stimulant; it excites the system and arouses it to activity; it also will take the place of the best known tonic. The inquiry now arises why older writers and electricians have not discovered these facts and given them to the world? It must be because instead of nerve centers they have used the currents to peripheral nerves and employed it only for a local stimulant and its tonic effects were not observed.

Dr. Scudder says: "I want to call the reader's attention to the absurdity of the common idea of electricians: that electricity and nerve force were the same or similar. This is a central principle with some of them. It is very easily proven to be erroneous. It is just as much an error to believe that nerves conduct electricity through the body, in the ordinary use of the battery as medicine. The experiments of scientists prove that one tissue is quite as good a conductor as another if it is continuous. Electricity always takes the shortest road home, and 'don't go foolin' around' after nerves if it can find anything else as good.

"The important question is, 'How does electricity influence the life of the body?' If we take a healthy man and give him a full dose (and it need not be unpleasant) we will find that the first action is excitation and following this a proportionate exhaustion. He will feel as sore the succeeding day as if he had made the first experiment at mauling rails. We can clearly see that our agent is a stimulant, and our patient has been overstimulated. Need I say that we do not want this influence?"

We differ with the doctor. It depends upon the

length of time the disease has been standing. Why over-stimulate a chronic ulcer? we give stimulating doses of quinine to promote absorption. Electricity will not cause a person suffering with acute inflammatory disease to feel as though he had been mauling rails, but it relieves the soreness. On a perfectly well man the currents can be used with impunity, as the change of polarity induced is but temporary, and the instant the powers are withdrawn the forces are equalized, and no unpleasant effects felt. But let the system be clogged with effete matter, then soreness is the result, especially if the direction is from the peripheral nerves toward the nerve center. Then the impurities are stirred up and left in the blood to settle on the nerves and muscles, and that causes soreness, as if they had been "mauling rails."

Influences change an element from one allotropic condition to another, and new chemical changes are the result. These chemical changes are effected by vital activities, the elements concerned being electrolytes. Placing the negative pole farther towards its extremity and using currents of sufficiently high intensity, and the quantity graded to the strong muscular contracting tendency, as in the current A D, Dr. Kidder's battery, a strong current will make the muscles sore and lame. Now using the current from A B, with light power, the soreness and lameness will almost immediately be cured.

Here is where the mistake is made in the present make of batteries. There is too much tension to the exclusion of quantity. This is overcome by using salt in the water, enabling us to use only the primary current, until the effete matter is removed. I avoid all tension currents except in paralysis of sensation.

Dr. Scudder says electricity does not go "fooling around" after nerves when it can find muscle to run on. If scientists will find any muscles without nerves we

will admit their theories correct, but as nerves are so minute that the point of a pin will detect them, we will conclude electricity will take the "shortest road home," for if it cannot find nerves in a straight line it will by induction follow another. The muscles and tissues are influenced by the nerves. It is through the nerves that disease exists, and relief must come by the same influences aroused to vital action.

Too little attention is paid to this wonderful network of the nervous system; muscles and tissues are controlled by it, and if it were not for nerves the medicine used could not be assimilated. In my chapter on medicine I have tried to prove the wonderful power of assimilating remedies when nerves are intensified by electricity. Another journal says: "The editor confesses to an utter ignorance of the medical uses of electricity. He has had some experience with it but nothing was learned further than that, in his use of it, it was not profitable." Here lies the secret why this powerful remedy has not been more thoroughly investigated. To drug the sick pays better, and is much easier for the practitioner. But the time has come when the people demand something more reliable than medicine alone, and to this demand we respond, battery in hand, and hope the time is not far distant when the medical profession will follow our example, and use it as an adjunct if nothing more. They will soon see that the medical world has found nothing to equal it in the arcana of medicine, from the days of Esculapias to the present.

One thing is surprising, that physicians will put batteries into the hands of patients, for indiscriminate use, where they have indulged in the most reckless abuses. These same physicians must have applied it hap-hazard or they would not have given it to others to use who were totally ignorant of its laws.

As far back as the last century, electrical shocks were administered in many diseases, such as rheumatism, paralysis, etc., but as far as we have been able to learn, the only way in which it was administered was in this manner, and few were willing to submit themselves to such shocking experiments.

From the above fact arises one of the most difficult things we have to contend with, these itinerant electricians perambulating the country with galvanic batteries, stopping at our city,, standing at the corners, trying to cure diseases by shocks at five cents a shock. Its effect has an all-powerful influence on the invalid, and nothing short of treatment with our mild induced currents will convince them to the contrary. A shock of electricity is detrimental to a healthy person, and how much more so to a diseased one? The same amount of electricity could be applied to the body with impunity, but the nerves of the hands being more sensitive, renders the shock unpleasant, and no permanent benefit can be gained.

In order to effect a cure it is necessary to have the application made direct to all the nerve centers of the spinal column, and all the cranial nerves. If we could keep up the communication between the nerves of the stomach and brain, we would not have so much general debility from an overworked brain as we now find among our professional men. By overworking the brain they cut off the nervous supply by partially paralyzing the pneumo-gastric nerve, and our first effort when these cases come under our treatment is to treat this nerve, and by that means vitalize the stomach and cure the dyspepsia, thus causing an equilibrium between the brain and digestive organs. This we have proved to hundreds of patients, when they supposed they had heart trouble, Bright's disease of the kidneys, and a thousand and one imaginary diseases, which proceeded

from the supply of nerve force being cut off between the brain and stomach. The great manufacturer of vitality, the brain, must be fed with nerve or electrical force manufactured from the acids and alkalies of the whole system. It is as necessary for the whole body to furnish these to supply the electro-vital force, as it is for the electrician to provide the same to manufacture electricity from his battery. The human body is a battery that evolves a finer and a more intense electricity, also providing its own magnetism. When by excesses this is lost to the individual, we can stimulate the nervous system, and produce an equilibrium, thus restoring health. This is not done by shocks, but by a mild and pleasant treatment, modified by our own magnetism. As the natural laws that govern electricity, and the various and intricate functions of the body, become better understood, the applications and diagnosis become more and more certain. Even now, in the hands of a skillful operator, this agent will detect the exact location of any derangement of the body, without asking a question.

We have proved this remedy to be infallible in our hands, in producing an equilibrium of the nervous forces, and through that equalizing the circulation and stimulating nutrition. This new method of using electricity will bear the closest investigation from any school of medicine, and we challenge the whole world to investigate it.

We will prove to them that we can reduce acute congestion or inflammation in any part of the organism, such as inflammation of the lungs, liver, bowels or brain, in less than thirty-six hours.

We cure chronic diseases by arousing a healthy inflammatory action of the whole system, and treat chronic difficulties to gain the same results that a physician does when he treats chronic ulcers.

It has taken years of study to do this from a scientific basis. We have studied this and have built a foundation of cure that will bear the closest investigation by the most learned. This agent does not belong to any particular school of medicine, but is free to all, like water, but it must be used intelligently, and by those who have made a special study of the human system.

No one can be better aware of the length and breadth of this extensive and intricate subject than we are; for a constant study and experience of fifteen years have convinced us that the A B C of it is scarcely reached by the physicians. But we have proven that it has a scientific basis, which can be reduced to practice, both in teaching, and in its successful application to diseases. We have actual knowledge of the efficacy of electricity, as a remedial agent capable of producing radical cures where everything else had failed.

To sum up its power as far as we have proven it, is this:

It arouses vital action, stimulates organic life, eliminates diseased matter by decomposition, and attracts the same to the polls of the battery, acid going to the positive pole, alkalies to the negative, and also imparts new vigor to the nervous system. The whole materia medica does not furnish a more powerful remedy than this agent, but that influence depends entirely upon the manner in which it is employed. An electrician who understands his business can use it as a stimulant, or an irritant; so quiet and beneficial are its effects on the kidneys that it is a pronounced acute diuretic. It operates as a sedative in quieting the nervous system, or acts like an opiate in easing pain and giving rest. It can if necessary be used in place of an emetic; all this because it controls the vital powers of the system.

The horrors of dyspepsia in its many forms are conceded to be indescribable. We meet persons daily who have tried every known remedy recommended for the cure of this disease, but without receiving any benefit. Indeed, we assert from our own observation and experience, that there is no medicine known that will give health and comfort to the confirmed dyspeptic. We have had much to do with the treatment of this disease, owing to its almost universal prevalence. More than one-half of all our patients suffer from it. Electricity properly applied, in harmony with the polarity of the nervous system, will cure every case, no matter of how long standing. By its action the stomach and liver are speedily restored to a healthy tone.

For the relief of ulcers and sores electricity is most efficient. It arouses the dormant energies, quickens the absorbents, increasing the vital action, and by its continuance, the most refractory cases are healed.

For cases of paralysis, nervous prostration and debility, electricity stands pre-eminent. Not less potent its effect in the restoration of lost vitality. In all cases of rheumatism and neuralgia, acute and chronic our treatment acts like a charm. We claim that the mechanical action of electricity is of as much importance as the chemical. It can be made to contract or relax any abnormal muscle or ligament. Its immediate effect is seen when brought to bear upon hernia, stricture, and especially upon diseases of women. The uterus has attending it a great variety of complications. This organ, being the grand nucleus of womanhood, is in sympathy with all other parts of the body, causing many symptoms remote from the true cause. The present degeneracy of women is due to this sapping of the very foundation of health and vitality. These diseases in all their different forms being the result of weakness and relaxation of the muscles and ligaments holding

this organ in place, no permanent benefit can be experienced until the nervous energies are restored, and the muscles and ligaments are contracted. We have proved by hundreds that this can be done by the proper application of electricity in from one to three months' time. The exciting cause in thousands of cases is the present mode of treating these diseases by specialists. It were better our women had no treatment at all than to become victims of these gynecologists. Having made a special study of all diseases of women, and treated them with unparalleled success, I dare to assert that electricity will cure all the diseases women are heir to, without exposure of person. No caustic, bleeding, pessaries, or surgical operations are necessary, except in some extreme cases. Away with local treatment in any form, when we learn that disease originates in the nervous system, in the electro-vital force of the body, and not in the blood, and that in health the nerves are the motive power of the body. Then will we all value this remedy as the best agent known for building up the general health, thereby relieving all local diseases. We want a remedy that, when it comes in contact with the gastric juices of the stomach, will generate nervo-electrical force for the natural stimulation of that organ. When the stomach and all the digestive organs are manufacturing pure blood, ulceration and inflammation will vanish like dew before the sun, and all local treatment is useless unless this can be accomplished.

Why do we have abnormal growths? They exist in consequence of weakened vitality, and must cease as the healthy tone of the vital forces are increased. We have proven this in many cases of ovarian fibroid tumors and all kinds of fungus growths. We stimulate the absorbents to carry off as fast as we decompose, by the chemical action of electricity. It is not logical or con-

sistent to suppose a radical cure of this class of diseases could be effected by local treatment alone, with electricity or any other remedy. Some physicians of great reputation do try to disperse tumors, cancers and other morbid growths, by local treatment with galvanism. But what are the results? They do often reduce the growth, but at the expense of some vital organ; in two-thirds of these cases death ensues from a metastasis of the disease. The only successful way to make a permanent cure is, as fast as we decompose morbid matter, to give general treatment; treat all nerve centers, producing an equilbrium between innervation and nutrition; stimulate the skin, bowels and the absorbents: by so doing, causing the corrosive particles to be thrown off through the channels God designed. The whole secret of success in the use of this agent is in the mode of application. What would be the result of a medical man's experience, if instead of studying materia medica he should give his prescription hap hazard? Just the same result as when a physician undertakes to use this glorious element of nature, without making a special study of it. Any surgeon can perform an operation, but a *good* surgeon knows just when and where to cut and never make a mistake. So success will crown the efforts of an electrician that understands the different currents and is familiar with the nervous system.

CHAPTER III.

MAGNETISM AND ELECTRICITY

Of the vastness of these subtle elements there is no conception. Heaven, with its system of worlds, is under the control of these agents. They are the lever power of nature. It is by the marriage of these magnetic properties of the earth and the electric action of the sun, that the seed is caused to grow and develop into beauty and vegetable increase. Human and all animated beings, are subject to the same electric and magnetic laws that govern the universe. Dr. Atkinson, of England, and many others, have decided that magnetism and electricity are not identical, and differ in the effects which they produce upon the weather and climate. He says their operations are as distinct as heat and cold:

"*Magnetism.*—The intensity of the magnetic forces in different parts of the earth is according to the distance from the poles.

"*Electricity.*—The intensity of electric force is greatest at the tropics, and diminishes as it approaches the poles.

"*Mag.*—The frigid zone, where magnetism is in the greatest intensity, enjoys an atmospheric calm, which is unknown in temperate regions. It has no such storms, no hail, and scarcely a tempest.

"*Elec.*—The most vivid lightning and the loudest thunder are peculiar to the tropics; here vegetation is vigorous and active at all seasons.

"*Mag.*—Magnetism suspends the decomposition of vegetable and animal matter.

"*Elec.*—Electricity assists decomposition in all vegetable and animal substances.

"*Mag.*—Magnetism produces a sedative action on the human form, when applied under certain conditions and causes.

"*Elec.*—Electricity is of an exciting character, increasing the circulation of the blood, and arousing paralyzed conditions of the nerve centers."

We see from the above that electricity and magnetism, when out of the human body, act directly opposite But the marriage of these two elements is essential to the development of perfect health; they are dual in their manifestation when acting in harmony. In treating disease with electricity, if the operator is strongly magnetic, he modifies the electric action to the benefit of the patient. All admit that electric conditions of the atmosphere have a decided influence on the general health. Every one experiences a heavy and depressed feeling when the air is surging with negative electricity. Dr. Faraday's researches on the electric action of the air throw light on the aggravation of diseases at different times of the day, as well as the increase and decrease of epidemics and other diseases in different months of the year.

According to statistics the greatest number of deaths takes place in the morning, when there is the least quantity of electricity in the air.

In the earlier periods a certain stone of dark color was found in iron mines, and was named loadstone. All know its wonderful magnetic properties in attracting to itself iron, steel and other metals. Usually the smaller the magnet the more power it possesses. A magnet was once found weighing but the twentieth part of an ounce, which could lift a piece of iron forty times its size. The Emperor of China once owned a

magnet weighing 38 lbs that could lift 200 lbs. History tells us that Sir Isaac Newton had a magnet capable of lifting a piece of iron 250 times its own weight, set in a finger ring. The compass is due to this magnetic property. The earth seems to be a vast magnet and all the developments of the various phenomena of magnetism are due to this fact. The most powerful magnets are produced instantly by causing the voltaic current to pass around a piece of soft iron. This is the motive power of electro-magnetic machines.

The galvanic battery is a combination of cups, each containing the material necessary; the power depends on the number of cups. One of its recent results is the production of electric light; it is far more brilliant than gas; and another, whose practical benefit exceeds the former, is the telephone.

What is electricity, is it a substance or a power? Wells' definition is: "Electricity is one of those subtle elements or agents without weight or form, that seems to be diffused through all nature, existing in all substances, without effecting their volume or temperature, or giving any indication of its presence when in a latent state; but when liberated from this repose, is capable of producing the most sudden and destructive effects, and exciting powerful influence, either by a quiet, long or constant action." The decomposition of a substance by electricity is called electrolysis. The literal meaning of this word is loosening by electricity. Upon applying the electrical current to nerves we loosen the morbid matter attached to them. Goldenbird says: "We can produce electricity through any porous diaphragm."

There are generally acknowledged to be three principal sources of electricity, viz: heat or thermo, frictional or static, and chemical action. The human body when in health generates all these three. First, the

alkalies and acids through the mucous and serous surfaces evolve galvanism; by the motion of the body, static or frictional electricity; and is not the brain a perfect thermo pile, with its layers of white and gray matter, the gray matter generating the electricity, the white nerve fiber being its conductor, and all modified by the magnetism of this wonderful machine when in health, disease being caused by a disturbance of these forces?

In inanimate bodies at rest we find no discernible electricity; the attraction of one of the forces is equal to the repulsion of the other, and to produce action the negative and positive forces must be disturbed. This is illustrated in thunder storms; one cloud, positively charged, comes in contact with another in a negative condition, and as these forces on meeting always tend to an equilibrium, the concussion creates a sound similar to that of a Leyden jar.

The philosopher Thales of Miletus, one of the seven sages of Greece, first discovered the manifestation of this mysterious force by rubbing a piece of amber with a dry cloth. The science of electricity dates from 1600, when Dr. Gilbert of Colchester, physician to Queen Elizabeth, in a work on magnetism first used the word electricity. The first electrical apparatus was made in 1672 by Otto VonGuerick, which was a simple frictional machine. We hear nothing more of consequence in regard to electricity until 1791, when Galvani, an Italian professor of anatomy, announced the discovery which he had made, that muscular contraction was produced in the leg of a frog, recently killed, when two metals, such as zinc and silver, were applied, one to the crural nerve, the other to the muscles to which the nerve is distributed, and then brought in contact. To this discovery we owe the science of galvanism.

The first voltaic pile was constructed by Volta in 1799, and became known in England in 1800.

The first intelligent, comprehensive theory was advanced by Dr. Franklin; he discovered that atmospheric and frictional electricity were similar, and was first to demonstrate that water was the best conductor, by drawing fire from the clouds with his kite-string. His success seemed doubtful. No sparks being received, he was about to retire from the contest chagrined and crestfallen, when a sudden dash of rain dampened his kite-string, thus making it a good conductor, which brought the desired result. His proving this fact has been of great benefit to the electrician, for water is the principal conductor between wire conductors and the nerves of the body.

To Professor Faraday, the greatest electrician of the world, are we indebted for our present substantial electrical theories. He proved that the contact of two dissimilar metals always caused a chemical action, also that electricity was evolved by chemical action where contact was impossible; this is called induction.

To him we are indebted for the mild and interrupted current of the present style of battery. The induced current modifies the galvanic current, thus making it more available for medical use. The discovery of the induced current by Faraday in 1831-2 has changed the whole course of electro-therapeutics.

More than one hundred years ago a German physician reported he had cured a case of paralysis of a finger by sparks drawn from an electrical machine. Since that time intelligent men of every nation have experimented with a view of curing disease. Every year some new and important discovery has been made, and gradually the various facts have become systematically

arranged, and now scientists admit that electro-therapeutics are a science.

What great things have been developed in that hundred years, and what wonders have been demonstrated since Dr. Franklin proved the identity of electricity! A hundred years ago physiologists did not dream that electricity was the key to physiology, that electricity was life; they did not dream that electricity was the healing principle in our own bodies, that the electro-vital force under the control of the will keeps the system in health. In disease medicine produces its effect; it helps to equalize the vital forces; it is used to prop or support some weak point, to aid nature in restoring herself.

Medicine produces a physical impression, but never heals disease. The curative power is in the individual; it is in the movable life-giving fluid that moves the blood; it is the electricity of the body that does the work.

So closely bound together are physiology and electricity, and the whole science of medicine, that a close study of it has become indispensable to all successful medical men and women.

CHAPTER IV.

IS ELECTRICITY LIFE?

"Electricity is not life, but it is that power by which vitality acts upon and controls the elements and material matter for the development and perfection of its own peculiar form of life."

Plants may be made to grow more when under the influence of galvanism in one week than they would in a month without it. Weak and enfeebled children may be made to develop strength, and that rapidly, by a proper use of electricity, as it stimulates organic life. It always excites each individual organ and each organism as a whole to a normal action and never to a diseased one. The muscles contract under its influence, the liver is aroused to an increased activity, the salivary glands to produce a free supply of saliva; and so with all the organs of the body, each may be aroused to an increased activity by this most powerful stimulant. It has the power of exciting action without exhausting natural vitality, hence it is not followed by the corresponding depression. If not used with too strong currents a homeopathic dose of electricity scientifically given is inspiring to the nervous system, while an allopathic dose with a reversed current would produce extreme debility and depression of spirits. The excessive use of it in large doses tends not only to relax, but even to disorganize the nerve and mus-

cular tissues, severing and breaking up the polarity of the system and causing paralysis.

When physiology is usually treated as a science, and presented as a part of the foundation of a thorough medical education, then of course it embraces the whole of organic life.

All classes of organized beings and organisms have their appropriate chapters, according to their mode of development. But with electricity we give place to one grand phase of physiology and an indispensable science to the healing art.

Hahneman in his organism says: "The homeopathic method, or that which employs medicine producing symptoms similar to those of the malady, is the only one of which experience proves the certain efficacy." Again he says: "This is grounded upon the therapeutical law of nature, that a weaker dynamic affection in man is permanently extinguished by one that is similar, of greater intensity, yet of different origin." There is not a remedy in our homeopathic materia medica that can equal the dynamic power of electricity, or that can be administered with so much certainty. If the totality of symptoms are studied and the application of electricity is understood, the result we wish to gain is as certain in acute diseases as the rising and setting of the sun. And the same can be said of chronic diseases, if we intensify or potentize the nervous system with electricity, arousing an acute vital condition.

One thing that all must learn, who use this remedy, is that we never can gain a greater intensity, so as to neutralize and absorb a lesser dynamic condition, by using the superficial currents, or by local application alone. We must give general treat-

ment, and the currents must be run in the direction of the natural flow of the nerve forces, from the nerve centres to the peripheral nerves.

CHAPTER V.

DO MEDICINE AND ELECTRICITY HARMONIZE?

We could, in answering this question, occupy considerable time and space; but we will say that remedies given in small doses will prove beneficial in connection with electricity. Knowledge is valuable when founded on truth and experience. The latter has taught me that simple remedies, in small doses, with good nursing, will be better appreciated and give better satisfaction than the large doses of medicine formerly given. To be successful we must use good judgment and common sense in administering our remedies. In past years the physician came to the house in his carriage, with his sleek-coated horses and colored driver, or perhaps he walked, and to aid him carried his gold-headed cane. He came in with a pompous air and wise look, drew off his kid gloves, placed them and his beaver on the table with an air that said "Who but I." He daintily touched the pulse, looked at the tongue, asked a question or two, shook his head mournfully and looked wise. He wrote his prescription with a gold pencil, and sent to the drug store for a half-pint or more of drugs, which caused the patient to feel worse and the stomach to rebel at the nauseating stuff. Why, the looks of the doctor made the patient worse! Why didn't he come with sunlight in his face, tell the patient he will be up soon, give his simple remedies, kiss the little ones, and leave the patient feeling better in spirits if not in body? And people are commencing to see the difference, and demand more rational

treatment. Is medicine a science, or is it a lottery? This question might be asked with good reasons for so doing. Although we have advanced in the so-called science of medical treatment, yet there are many physicians to whom it is an experiment. They know that fifteen drops of aconite and four ounces of water, a teaspoonful every three hours, will reduce fever immediately after giving, but they don't know why, nor do they know that one-third of the aconite given every half-hour not only reduces the fever but holds it down. Some experiment: "If this don't cure I will try that," and continue their experiments until the patient passes to some other physician, or to Him who sent him. Others study every new remedy until they are satisfied it is good or bad, and then use it or cast it aside accordingly These are the ones who are at the head of the profession.

In electricity we have an agent that will materially aid these remedies if they are administered in a judicious manner, and in many cases the electricity alone will produce better results than when used in connection with drugs. But one thing must be remembered and never lost to the mind's eye: When using electricity give *small* doses. This we have proved by the experience of fifteen years. I often heard people say, "Electricity does not agree with me." I questioned them, and found it was the strong medicine they were taking in connection with the electricity, that did not agree with them. Electricity stimulates the nerves and absorbents to such a degree that they take up and show the poisonous effects of the medicine. For instance, if arsenic or strychnine is given in large doses, and electricity applied within twelve hours, the patient will show the poisonous effects of the remedy, when small doses of the same remedy would have been harmonized.

I will cite a case I had in 1879, while practicing in Cincinnati, Ohio, Mrs. G., age 40: Found her with retro

version of the uterus. She was under the care of an old-school physician, and did not wish to discharge him, but desired me to treat her without his knowledge, which I very foolishly agreed to do. I gave her four general treatments. Upon my fifth visit I found her in bed very ill. She had been taken sick at midnight and sent for her family physician, who pronounced it poisoning from morphia, the drug having been introduced into the vagina, the evening before, in the form of a suppository. The doctor was very much surprised at the symptoms, and enquired if she had taken any more than he gave. Being assured she had not, he could not understand the reason for such bad results. He made a digital examination, and finding the uterus replaced, went away believing that the morphia suppository had performed the cure. She failed to inform him that she had used electricity. I told her then that the treatment I gave had replaced the uterus, but I did not tell her it was the cause of her sickness. She believes I cured her and the doctor thinks his morphia did; and she occasionally remarked in after years, "Didn't we fool Dr. D nicely?"

About eight years ago I called on a man that had a partial dislocation of the spine, causing paralysis. I asked him if he didn't want to try electricity for his trouble. He answered, "I have been nearly killed with electricity. I was thrown into spasms soon after I commenced treating with it." I asked him, "What medicines, if any, were you taking at the time?" Now, mark his answer: "Strychnine in large doses." "Your spasms were caused not by the electricity but by the strychnine," and in a few minutes convinced him of the fact. These few hints will be sufficient to put others on their guard. Two-thirds of the people I treat sooner or later develop some drug poison, most frequently salivation. I have aroused the mercurial poison and produced com-

plete salivation, where no mercury had been taken for years, and in one case as many as thirty years had passed since the last dose had been taken; but a few treatments throw it off and pass it out of the system through the natural channels. Sometimes the patient under the sponge will be extremely nauseated; if so, I usually find Fowler's solution or other forms of arsenic have been taken. Strychnia causes nervous spasms. Electricity, as we apply it, stirs up all the poison, no matter of what nature, and if the treatment is continued it will entirely eradicate it from the system, whether it be zymotic or mineral.

CHAPTER VI.

SALT OR CHLORIDE OF SODIUM.

I consider salt an important and essential element, as an adjunct to electricity; together they work in harmony and help us to diagnose with more certainty than could possibly be done without it. I will briefly give some of the principal reasons why we consider it of so much importance, both for diagnosing and giving electrical treatments.

"Salt has some characteristics, peculiar to itself, differing from all other compounds or elements, organic or inorganic. It is not in any sense nourishing, as it does not furnish support to any organ or function, and does nothing towards sustaining life, as has been often proved in the case of the shipwrecked and famishing sailor. Neither is it a chemical agent, combining with some other element in the system to effect a necessary change, as the acids combine with alkaline bases and remove effete matter from the system in the excretions; but it is chloride of sodium, wherever found, in the stomach, in the blood, or in the excretions. But whatever else is accomplished in the system by salt, its essential use is that of a condiment, exciting the excretory organs to do their duty, and certain it is, that it does incite to action the salivary and other glands. Take into the mouth a bit of salt fish, and the mouth is immediately filled with saliva, and when it is received into the stomach, the gastric juice also immediately gushes out. Of these effects on the glands of the mouth and stomach we can have no doubt, as they are under the ob-

servation of our senses; but of the effects on the liver, the pancreas, and other glands, we have only to judge by inference, but the inference is certainly fair, that if the glandular system, as far as we can know, is stimulated to action by salt, the other glands, whose action we cannot observe, but whose duties are also connected with the process of digestion, may also be effected by the same agent. My conclusion, therefore is, that salt promotes digestion by exciting the glands, and inducing the production and flow of their secretions."*

Fifteen years experience with salt in treating diseases is enough to warrant me in believing and acknowledging the truth of the above.

Salt also stimulates absorption. It is one of the greatest eliminators we have, and a remedy that should stand pre-eminent in our Materia Medica, in all chronic affections. Chemical analysis shows that the blood is composed of the fourteen elements which help to make up the different parts of the system. When the blood is normal salt is found, but when impure there is a deficiency of salt. Some physiologists claim that salt helps to keep the blood in fluid, and in our opinion salt is of the utmost importance in keeping the blood pure and normal. We have in many instances, where the blood was thick and sluggish, used large doses of salt, to wet the sponges in for external application of electricity, and immediate benefit was the result, and in a few days the red and vitalized blood would be bounding with vigor through the entire system. We apply salt cloths to the liver, spleen, and kidneys, wrapped around our plates at each treatment. When the patient's breath is fœtid we order salt and charcoal to be taken before each meal; one-third salt to two-thirds pulverized charcoal in water, small doses each time. Salt alone on the tongue is a benefit in dry sore throats and coughs.

* Dr. Bellows in his "Philosophy of Eating."

Salt gives power to overcome resistance. It acts with greater energy in reaching deep nerve centers, and seems to give a larger quantity of electricity, which enables us to use the primary or electro-galvanic current. This gives a better allotropic or chemical action in the blood. If impure, it changes the effete matter, and the glands and absorbents are stimulated, so that we gain a two-fold benefit, because the impurities are discharged through their natural channels. If it were not for salt, we would be obliged to use the secondary or tension currents, A D posts, instead of A B, or the primary current.

This knowledge of the power of salt has been worth thousands of dollars to me, when looking from a financial standpoint; but of how much more value is it to suffering humanity? This one thing gives a wonderful power over the present method of using the secondary or tension currents, and many who have experimented and seen only temporary benefits, and given up in despair, and condemned the best and most specific remedy we have, may now investigate with all confidence of successful results. The world has been blessed with many inventions, but electricity when perfected is the greatest and best of all, and will, as the people become educated to it, stand out prominent and alone, above all others. The best means of using electricity is the most important study for every intelligent person. The basis of a true knowledge of the best modes of application will give power over disease that could be obtained in no other way. The greatest want now is an improved make of batteries, that can be adapted to any part of the system without strong tension currents.

I use about one heaping teaspoonful of salt to one quart of water. If the disease is very chronic, and many treatments given, care must be taken not to use too much salt, or it will act as an irritant. I have had

cases of irritation of the bladder from overdoses of salt.

As was said before, salt is *salt*, wherever found, and is thrown from the system through the skin and urinary organs, causing irritation where too much is used. Remember small doses of everything are best.

By Dr. Gunn: "Common salt, medically called muriate of soda, is one of the most abundant productions of nature; is tonic, purgative, anthelmintic, and external stimulant; administered in some cases of dyspepsia and worms; in large doses to check hemorrhage, or bleeding from the stomach, lungs and bowels; and used as an ingredient in clysters, as a fomentation in bruises, and, added to water, a stimulant bath. In many cases of disordered stomach, a teaspoonful of salt is a certain cure. In the violent internal pain termed colic, a teaspoonful of salt dissolved in a half a tea cup of cold water, taken as soon as possible, with a short nap immediately after, is one of the most effectual and speedy remedies known. The same will revive a person who seems almost dead from receiving a very heavy fall. In an apoplectic fit, no time should be lost in pouring down salt water, if sufficient sensibility remain to allow of swallowing; if not, the head must be sponged with cold water, until the senses return, when salt will completely restore the patient from the lethargy. In a fit the feet should be placed in warm salt water, with mustard added, and the legs briskly rubbed; all bandages removed from the neck, and a cool apartment procured if possible. In cases of severe bleeding at the lungs, and when other remedies failed, Dr. Rush found that two teaspoonfuls of salt completely stayed the blood. It should be eaten dry. In toothache, warm salt water held to the part will relieve in most cases If the gums be affected, wash the mouth with brine. If the teeth be covered with tartar, wash them twice a day with salt water. In swelled neck wash the part with brine, and drink it also twice

a day until cured. Salt water expels worms, if used in the food moderately, and aids digestion; but too much salt meat is injurious. Salt is a most valuable remedy, and may be relied upon in croup. The dose is a teaspoonful, mixed with a tablespoonful of honey and given. This recipe was given me by the Rev. Mr. Fisher, a Baptist minister, who says it is a certain cure. In bowel diseases, especially dysentery, cholera and cholera morbus, salt is one of the best remedies known. In such cases it is to be mixed with vinegar and warm water, and if there is any sickness at the stomach, as in cholera, add also a teaspoonful or two of ground black pepper to a tumblerful of the liquid, to be taken freely."

According to Dr. Gunn's reasoning it won't be amiss to use salt as I do, at every electrical treatment; that is, in the water we wet our sponges or clothes in. The current will send it along on the telegraph wires or nerves, to the seat of disease, which is a much easier way than to take it into the stomach.

CHAPTER VII.

PHYSICAL DIAGNOSING.

"Physical diagnosing is a term used to designate those methods which are employed for detecting disease during life, by the anatomical changes which it has produced." *

There are seven methods of diagnosing disease by physical signs: inspection, palpation, mensuration, succussion, percussion, auscultation, and electricity.

Inspection is to closely observe any changes in the size, form, or symmetry of an organism, and especially of the thoracic cavity; palpation or digital examination; mensuration is a method of obtaining information of physical deformities by measurement; succussion is used for diagnosing pneumo-hydrothorax; the method employed is to suddenly shake the patient, while the ear is applied to the chest, to discover if fluids are within the chest cavity. Percussion is a method used to detect solid growths, or indurations of glands, by striking the surface with the tips of the fingers, with some intervening substance between the surface and the fingers. The substance which receives the stroke is called the plessimeter; it should be made of gutta percha, the hammer of rubber. Auscultation is listening for sounds within the cavity of the chest, by applying the ear to the surface. Electricity is a method employed to detect obscure causes of sympathetic diseases.

There are many mechanical aids used for diagnosing disease in all parts of the body, such as the crytometer,

* A. Loomis, D. D.

used to determine the distance of the apex beat from the median line; this instrument was devised by Dr. Cammon; the laryngoscope, for examining the interior of the larynx; the sphygmograph, used as an aid to diagnose the heart, arteries and veins; it gives the exact pulse wave, the frequency and regularity of the pulse; the ophthalmascope, for diagnosing the eye; the microscope, for examining the blood or other fluids, and the tissues; the dynamometer, for measuring the strength of the hands; the æsthesimeter, to accurately determine the degree of tactic sensibility of any part of the body; the exploring trochar is an important aid to determine the character of fluids that may be found in abnormal conditions of the body; specula of various devises for exploring the ear, vagina, rectum and urethra; the endescope is sometimes used for the same purpose.

While science has been so productive in the supply of instruments for the mechanical diagnosing of the diseases humanity is heir to, why do we have the terrible and unpardonable mistakes that are presented to us everywhere? We will quote from some eminent authors the reasons why medical men are not more successful:

The first is from the late Dr. Rush, in his "Lectures in the University of Pennsylvania," where he says: "Dissections daily convince us of our ignorance of the seats of disease, and cause us to blush at our own prescriptions." "What mischief have we done under the belief of false facts and false theories! We have assisted in *multiplying* diseases. We have done more. We have increased their *mortality*."—*Robinson's Lecturer*, p. 109. And again he says with regard to failures in the practice, "Our want of success is owing to the two following causes: 1st. Our ignorance of the disease. 2d. Our ignorance of a suitable remedy."—*Ibid*, p. 79 Dr. L. M. Whiting said, in a lecture at Pitts-

field, Massachusetts: "Were we to see a sportsman standing beside a grove continually loading and discharging his gun, without aim, among the trees, and at the same time declaring his intention to be the destruction of a bird whose song he heard somewhere within it, we should, without hesitation, pronounce him *non compos*, and also a dangerous individual, and fit only for the straight-jacket or mad house. Yet such, if we mistake not, is very much the course pursued by many practitioners in the treatment of morbid conditions of the body by medicine. '*Shoot Away*,' is the motto. Perchance we may hit the mark; if not, the law is our safeguard, and we have the *satisfaction* that we have done the best we could."—*R. M. & S. Journal*, Vol. XIV, p. 1

"Specific medication needs specific diagnosing. All agents employed as medicine act either upon functions or structures, and this action to be curative must be opposed to the process of disease."*

If the action of a remedy is to oppose a process of disease, evidently its selection will depend, first, upon a correct knowledge of the disease, and second, upon a correct knowledge of this opposition of remedies. The success of direct medication comes from definiteness of diagnosis—determining the exact condition of a function or part. To illustrate, it is not sufficient in selecting a sedative to know that the pulse is frequent, using alike Veratrum, Aconite, Digitalis, Gelseminum or Lobelia. Frequency is but one element of the lesion, and we have to determine in addition the strength or weakness of the circulation, the degree of obstruction of the capillary circulation, and the condition of the nervous system that controls this function. Thus, where there is strength, with frequency, we employ Veratrum; fee-

* Dr. J. M. Scudder, "Specific Medication."

bleness with frequency, Aconite; excitation of the nervous system with strength and frequency, Gelseminum; atony of the nervous system and tendency to stasis of blood, Aconite and Belladonna; feeble impulse from the heart, without capillary obstruction, Digitalis, etc. It is not sufficient to know that the tongue is coated, indicating an impairment or arrest of digestion. We make this secretion give us the history of blood lesions, as well as of gastric and intestinal derangements. We learn that pallid mucous membranes, with white coat, demand alkalies; that deep red mucous membranes and brown coat call for acids; that a dry, pasty coat requires the alkaline sulphites, etc. It is not necessary to continue this subject further, for it will be understood that specific medication requires specific diagnosis.

Notwithstanding the many instructions in diagnosing that seem rational and in conformity with reason, we cannot account for the mortality prevailing everywhere, especially among children. Is it not because the majority of physicians are fighting the disease and ignoring the cause? First, remove the cause and the system, ever ready to help itself, will remove the disease. Many prevailing diseases among both children and adults are zymotic, and the treatment should be such as will remove these poisonous obstructions. Electricity, in the hands of an intelligent electrician, will point directly to the cause, when used as a diagnostic; then remove it and so permanently cure the disease.

CHAPTER VIII.

ELECTRICAL DIAGNOSING.

It is a well-known fact, that we cannot depend upon pathology as taught in our medical schools. If so why are so many mistakes made in our medical circles? Here then lies the great secret of cure with electricity, for by an electrical diagnosis, not only the seat of the disease is determined, but all of its pathological conditions are disclosed. I contend if it had no other recommendation this alone should make it an object of importance to every physician. The difficulty of properly diagnosing disease is one of the great deficiencies of medical science. We do not claim that every one who has a battery can diagnose correctly. We may just as reasonably expect to be cured by drugs given indiscriminately, as by electricity administered in the same manner.

Suppose you are ill; your physician is called, looks at your tongue, feels your pulse and asks questions until he is satisfied as to your condition, and prescribes accordingly. If you do not improve, a consultation of "medical" gentlemen of skill and talent is called. They avail themselves of the best means in their reach for examination, and retire for private consultation, the result of which is something as follows: Dr. A. is satisfied the chief difficulty is in the liver, Dr. B. attributes it to the stomach, Dr. C. to the spine, Dr. D. to the bowels, Dr. F. the brain or nervous system, and so on, according to their best judgment, experience and skill.

INSTRUCTIONS.

Can we suppose that God has not provided a more certain means of diagnosing disease than mere guess work, like the above? Yet this, or something like it, happens every day. It is a noted fact that physicians will not agree. The instructions laid down in the following pages will always give a true diagnosis, and any two electricians who may diagnose the same case, though miles apart, will always agree.

Have each patient procure a woolen shirt, and woolen blanket. For diagnosing they should remove all their upper garments and put on the woolen shirt. Woolen, being a non-conductor, keeps the electric current from running off, and also keeps the patient warm. Use a cane rocking chair, with high back and no arms. Lay the woolen blanket in the chair the longest way across, using a clean towel for the patient to sit on, unless the blanket is used exclusively for them. Now have the patient push the clothes down in order to adjust the sponge without wetting them. We leave the clothes around the limbs to protect them from the cold. After all is adjusted to your satisfaction, take about a quart of hot water, putting into that a small dessert spoonful of salt or Chloride of Sodium. Use two good-sized sponges perfectly clean; wring the smaller one out of the hot salt water, and wrap the small wire at the end of the cord, which has been previously attached to the post A. Place this positive current to coccyx or end of the spine. Then take the negative cord, B, with the large sponge in your hand, sitting in a chair at the right, lower than the one your patient is using. You must learn to use the left hand to diagnose the spine with, though it will seem awkward at first. Then take the sponge in the palm of the left hand, in order to make a firm pressure. Now commence at the back of the neck

at the cervical nerves, pulling out the plunger until the patient feels the current pleasantly, about an inch outside the box is sufficient. We have to be governed by the condition of each patient; some cannot bear the current from the lightest switch. We were at the cervical nerves. Pass slowly down, asking them to tell you when you touch a sore nerve. When they designate the place you must know where the nerve leads to. When this condition is found it denotes congestion or inflammation of the organ the nerves lead to, from the spine. For instance, if near the seventh cervical we diagnose dyspepsia or some stomach difficulty. If they complain of feeling the current go through to the front with the plunger out only a short distance, we diagnose general debility, If felt through to the front with a moderately strong current the condition is normal. If they have nervous dyspepsia they will feel sick or faint. There is no need of being frightened if they do, but give a little camphor and wait a short time until color returns to the lips and face. Then continue the diagnosing. It is seldom this condition is noticed after the first application; the stomach has been so long deprived of its nervous action, that the electric stimulus is strong until an equilibrium of the nervous force is aroused by the electricity.

Do not be led into the erroneous idea that because the spinal nerves are sore, that there is spinal disease. The spinal irritation found is only from sympathy of diseased glands or organs. The spinal irritation will be gone when the cause is removed. If spinal irritation is found in the dorsal region, the liver, spleen, or pancreas is diseased; if in the lumbar nerves, the kidneys; if in the sacral, the sexual organs; if at the coccyx, hemorrhoids or piles. When the throat or lungs are weak the patient will cough, if firm pressure is made on the back of the neck. When the current is strong, and it is not

felt through to the throat or lungs, and other symptoms are present that would lead you to suppose the lungs might be diseased, you may be almost certain of incipient consumption. And if the lungs are not aroused to a soreness by the seventh treatment, and they do not gain in strength, it is unfavorable. But if the nerves of the throat and lungs are sensitive, the trouble may all be from bronchial difficulty. Then the cure if treated right can be more certain. I have never failed in curing bronchitis, even after the tubes were ulcerated, when the lung substance was not involved; and have cured cases of acute or quick consumption.

Care must be taken that no mistake is made in diagnosing the thoracic cavity. Many patients are debilitated from other causes, and have liver and stomach coughs. It is more difficult to diagnose consumption than any other disease, either with electricity or by pathology, as taught in medical schools.

When the sponge is applied at the base of the brain, near the medulla oblongata, and the current is felt running up into the head, and no pain complained of, the nerves leading from the base of the brain are not diseased. When the back part of the head is sore to the electrical current there may be sympathetic trouble, as, for instance, if there is *sexual* difficulty, the organ of amativeness is *sore;* if toward the ear, the kidneys are affected, etc. The current should never be put on the forehead, for the reason that it is a flat bone, and as it has very little muscle covering it, the current causes pain and no benefit can be had.

When the nerves in and over the eyebrows are sensitive we diagnose catarrh, other symptoms being present. The nerves will be very sensitive in facial neuralgia, or weak eyes, or when suffering with a cold. The nerve center over the ear, called casserian ganglion, is always more or less sensitive to the electrical current,

especially if there is any disease about the head or face, as it is a nerve of sensation, and branches go from it to the teeth and all other parts of the face, tongue, throat, stomach, chest and heart. This nerve center holds an important part in treating for insanity, St. Vitus dance, or insomnia, in fact all nervous diseases.

We have now diagnosed the spine and cranial nerves. We will next pass the sponge down on either side of the spine, avoiding the shoulder blades, because they are flat bones, and so will not bear the current. Press the sponge just to the outer edge of the scapula, in the region where so many complain of pain; there you will strike the greater splanchnic nerve. When in position pull out your plunger and see if they feel the current go through to the solar plexus. If not felt on either side, the whole digestive apparatus is sluggish; if felt on the right and not on the left, the liver only is sluggish; if the current is felt through with the plunger out an inch, the digestive organs are healthy; if felt with a very light current the nerves are exhausted or weak, and nervous dyspepsia is probably the cause. Now move your sponge over the kidneys. If they are sensitive there is an inflammatory or congested condition; if a heavy current is borne and not felt through, they need arousing. If hips are sore some bladder or sexual difficulty is to be found upon further investigation. Pain running down the limbs shows pelvic disease, and as soon as the cause is removed the pains will leave. Enlargement or congestion of the prostrate gland will cause pain at the coccyx or lower part of the spine, complicated with pain in the limbs. Uterine diseases will give the same symptoms.

We are now ready to diagnose the front of the body. Take the sponge in the right hand, after warming it up with hot water. Do not wring your sponge too dry. As I said before, when the current causes pain in passing

the sponge over the chest, there is bronchial difficulty. If a sick feeling is felt, or pain in region of heart, we diagnose disease of that organ. As it may only be muscular, you must further diagnose, as taught by the other mode of practice, by placing the ear over the region of the heart, etc. Under the left breast is another point where you will detect some heart difficulty. Generally this is merely sympathetic, from the solar plexus, and is caused by dyspepsia or other disease. We often find a sensitive nerve in passing over the sternum or breast bone. This nerve leads to the stomach. Sometimes it is the superficial cardiac nerve. Experience will, in time, help to detect these different nerves. To be a good electrician the nervous system must be understood. On applying the sponge to the stomach, if it pulls up or contracts with a light current it is weak; if it takes a strong current to contract it, a torpid condition is to be diagnosed; it is very rare to find the stomach sore, but when a moderate current is borne without complaint the stomach may be considered normal. In diagnosing the liver, notice if it is larger on the right side than the left; the same symptoms follow this as the stomach, only it will not pull up unless sluggish and enlarged from its natural size. When healthy the current will be felt through without pain or contraction. If pain is felt towards the left side it is the solar plexus of nerves. A little farther to the left will be found the spleen, and the same results follow as in other organs. When there are uterine displacements there will be a weak, sore spot near the fundus of the stomach, and care must be taken that this is not confounded with spleen or stomach difficulties. After a digital examination of the uterine cavities has been made it can be determined. If the uterus is found congested to the touch, it is well to make a speculum examination, as when diagnosing with elec-

tricity we do not depend entirely upon it to be certain just what the disease is, but it points us to the cause. Just what that cause is, *must* be diagnosed by other pathological symptoms and other mechanical means. I nearly always, if any obscure symptom is found, take my *plessimeter* and percuss the whole system, so as to be certain there are no abnormal growths in the abdominal or pelvic cavity. When a dull sound is produced there is an abnormal condition. When the glands or organs are healthy the sound will be clear. If the liver is hypertrophied or congested it can be readily detected in this manner.

The bowels are a very important part of the body to correctly diagnose. When the bowels are flat and hard to the touch, and they do not respond to the electrical current, they are sluggish, the peritonium is thickened, the peristaltic motion is nearly if not quite lost, constipation is constant, and there is almost a paralyzed condition of the nerves controlling them. This may be the principal cause of your patient's disease. The treatment of this condition will be found in the chapter on constipation and rectal diseases. If soreness is found in the groin ovarian difficulty must be looked for. The pain will often run into the labias and down the limbs.

It will take months of hard study to make a successful electrical diagnosis, but time will reward your efforts, disease will be a foe you will like to battle, and with the aid of electricity, *conquer*. I have used it for *fifteen* years both to diagnose and cure disease, and still learn something new almost every time I treat a patient, and expect to study and learn for twenty years to come. I am fifty years of age and have kept *well* without medicine for all these years. When sick I use electricity, and with from one to three treatments all symptoms are gone and health restored.

If the profession at large would study electrical diag-

nosis, and by that means make their prognosis more certain, the people would not lose their confidence in medical science. Year after year their prejudices are growing stronger, for the simple reason that the profession make so many blunders in diagnosing, no two agreeing in the same case. I will cite one case of recent date:

In the winter of 1882 I was called to see Mrs. D., aged 50. She had been under medical treatment about a year. The distension was terrible, and she could breathe with difficulty. The mechanical obstruction was so great she could retain nothing on her stomach; her bowels were constipated. The then attending physicians were Eclectics; previous to these old school physicians, of considerable reputation as surgeons. They had treated this case, first, for heart, then for kidney disease. The then attending physicians were treating for gastritis. Having made tumors and uterine diseases a specialty for years, I had no hesitancy in deciding in my own mind, the moment I looked at her, and before asking a question, that it was a case of ovarian tumor. I made a digital examination per vagum, finding the pelvic cavity crowded to its utmost capacity. After the friends of the family came in I percussed the whole anterior part of the trunk, commencing at the throat and passing slowly down. A distinct hollow sound was heard by all present everything seeming normal until reaching the umbilicus, then a dull thud was perceptible to all. After using my plessimeter long enough to satisfy the friends that the difficulty was in the pelvic cavity, I told them that in my opinion it was a case of ovarian tumor. They were surprised, not one of the attending physicians having even hinted at the fact. I told them I could do nothing for her. I advised them to send for some prominent surgeon to consult, and see if it were not possible to save her by performing ovariotomy. The patient said she thought the diagnosis was correct, for, eight months be-

fore, she noticed an enlargement on the right side, and spoke to her physician with regard to it but he paid no attention to it. Another singular thing, was that none of them had ever made an examination per vagum. It was the climacteric period when she was taken sick. She had not menstruated since first noticing the tumor. The attending physicians were very indignant to think a homeopathic physician and especially one that made electricity a specialty, had dared to differ with them in diagnosing this special case; their *professional dignity* was hurt and they denied that the above was correct, saying if it were an ovarian tumor the distension wonld be only on one side. They claimed the distension was caused by gas and there might be some water. As they refused to have ovariotomy performed, I proposed through one of the friends that she be tapped, and if fluid was there it would relieve her for a time; they tapped her but nothing could be found except a calloid substance which adhered to the trochar. She grew rapidly worse and died from suffocation in two weeks from the time I first saw her. The autopsy revealed the presence of a calloid multilocular ovarian tumor. The cysts were broken down, and the abdominal cavity was filled full of this calloid substance and it had crowded up into the thoracic cavity. The contents were scooped out,enough to fill a large tub one-third full, beside the main cyst, which was taken away with the ovaries and fallopian tubes. It was said the whole weighed from 60 to 70 pounds. The uterus was enlarged and a tumor of cancerous nature growing from the fundus. All other organs were found to be healthy. My impression is these physicians were at last convinced it was a case of ovarian tumor.

CHAPTER IX.

REMARKS ON GENERAL TREATMENT.

LOCAL TREATMENT FOR BURNS.

Here the positive current should not be at the feet but near the burn, at the back of the neck, or under the arm.

Each treatment given lasts one hour, and is given every day, for at least ten days. After this period every other day will do, but every day, except Sunday, facilitates the cure. Experimenting has proved to my satisfaction that the closer together the treatments are given the better for the patient, both physically and financially. For instance, if he takes twenty-five treatments, one every day, he will be as well at the end of thirty days as he would be at the end of sixty days, provided he had received only twenty-five treatments in that length of time. To arouse the system

and not throw off as rapidly as possible, depletes, or causes irritation that would be thrown off if the treatment was taken every day. Some patients are weak and debilitated and must be built up before the system can gather strength to throw off disease. Such cases must take half-hour or what we call tonic treatments. Often what seems an aggravation from a long treatment, is invariably controlled by the next treatment, that which is aroused one day being removed by the absorbing electric powers the next day.

With the first three treatments we endeavor to arouse the blood poisons, of whatever nature they may be, zymotic, malaria, or strong medication. When aroused the patient complains of more pain than usual, headache, similar to bilious headache, or a sore feeling as if they had been pounded, or taken cold. These symptoms only accompany very chronic cases. It is seldom we fail to arouse this condition by the third treatment, even where the system is filled with effete matter. We aim to bring about this condition, so as to give a mild cathartic the evening of the third day. It must be remembered that the system is now intensified by the electrical action, and half the amount of pills will be sufficient. As a general thing I give two mild pills, sometimes three. You must be governed by the sluggishness of the system: I have had cases where it would take seven pills to move the bowels.

The fourth day we give a bath of some kind. The bowels having done their part towards cleaning out the aroused effete matter, the skin must act in conjunction with the other organs. It will be noticed that the kidneys are more active with every treatment. If a vapor bath is not available, an electric bath is given, as described in chapter on general treatment. This stimulates the absorbents of the skin, and creates a natural

tension of the muscular fibre. If a bath is given the effete poison is thrown off through the skin, and by the law of magnetic attraction, is carried off by the water. We prefer this to the other method. It facilitates the cure. The electric bath is salutary and will be of permanent benefit, although it takes breath to convince patients that they are not worse. These old chronic cases have been cold and negative so long that it frightens them to be warm and in a positive condition.

We are now ready for the fifth treatment. We direct our attention for the three next treatments to the local difficulties, such as liver, kidneys, uterus, etc. If deemed necessary we give another cathartic the evening of the seventh treatment. This is called the crisis. The eighth day another bath is given. Patients sometimes complain of feeling weak at this time, for the reason the disease is nearly gone and they are let down. We sometimes give mild tonic treatment for a day or two. We have been pulling our patient down up to this time, and now commence building up. This theory holds good as a rule, for after the tenth treatment you will find your patient's circulation is better. The eyes will show more vitality, the appetite will be improved, the skin will be moist, the tongue of a better color, and the pulse nearly normal. They may complain of more pain: this symptom is much more favorable than the chronic condition.

When the impurities of the blood are all discharged from the skin and muscles, they will respond to the current without contracting. When this condition is noticed the patient will build rapidly, and can be discharged with a very few more treatments. Let me repeat, when a strong current from the primary posts can be borne without causing pain at the liver or other diseased organs, and the muscles feel the current without

contracting through the nerve centers to the peripheral nerves, the patient can be discharged as cured.

A few days after stopping the treatment they will not feel quite as well. The system will miss its accustomed stimulant, but that will soon pass, and the electric forces of the body will rally and Dame Nature will then take up the good work, and improvement will be permanent. It may be as well to give some mild remedies, to be taken at intervals, if for no other purpose than to hold them from trying something else, while the system reacts. They have been drugged so long they will be better satisfied if they are dosing something, until they are certain they are well.

In using electricity, to gain the best tonic effects and throw off disease, we treat from the nerve centers, letting the current run towards the peripheral nerves, carrying along the effete poisons from the centers to the circumference, emptying them into the capillary circulation in the same manner that nature does. Let the reader investigate the matter by placing the two plates on the spine as directed in the chapter on general treatment. If the nerves are not clogged the current will be felt through the whole body with the primary current. If the upper plate presses on the cervical nerves the current will be felt to the end of the fingers. If the lower end of the plate reaches the splancnic nerve, it will be felt in the stomach and liver, while the lower one will send a current through the bowels and pelvis, and will sometimes be felt in the limbs. But very few persons can get the above effects unless the system has been purified with a course of electric treatment. When the electrodes are applied through the hands or feet it takes a strong tension current to be felt above the elbows, and the impurities are driven further towards the centers and nothing

gained; when, by the method as laid down in this work a mild primary current, with salt in the water the conductors are wet in, can be felt better than the latter with strong tension currents. It takes power to run either water or electricity higher than its fountain head, but let it run from its source to where it empties and it will flow with slight ripples and carry all the rubbish with it, in time bringing health and happiness because health is restored.

CHAPTER X.

INSTRUCTIONS FOR GENERAL TREATMENT.

LOCAL FOR PAIN IN THE ARM.

The positive current should be at the back of the neck and negative in the hand, and not the A. D. parts but A. B. parts.

Patients must be made ready in the same way as for diagnosing. It is absolutely necessary that patients be kept warm while being treated. Cover them with all the blankets they need, and put something warm at their feet if the weather is cold. Use hot salt water to wet the clothes in which cover the plates. These must be of soft texture to conduct the electricity, about the size of table napkins, of linen toweling or net wear. The plates are of brass of the thickness of stencil plate, and of two sizes, about 3x8 inches and 5x10 inches.

They should be made oval. We commence treating on the spine first, as this causes the electricity to permeate the whole nervous system, arousing the poisonous matter in the blood, or that which may be collected on the nerves; Under certain conditions it acts as a sedative. Take the largest plate, wet the cloth and cover it, attach the A or positive current, and apply it lengthwise to the lower part of the spine, then take the small plate and cover it also, after the cloth is wrung out of the hot salt water, and connect with the B or negative current and apply it between the shoulder-blades. After the plates are adjusted have the patient lie down. If you have have no treating chair, a bed or lounge will answer. When lying down the weight of the body makes better pressure on the plates and it will be felt through to the deep nerves and glands, and more benefit is to be derived from it.

After all is ready pull out the plunger and give all the current they can take agreeably. After this has run fifteen minutes, if the kidneys are diseased put both currents, one over each kidney lengthwise, one on each side of the spine, without letting them touch each other, or the circuit will then be made on the plates and will not be felt by the patient. After letting it run about five minutes if there is sciatic trouble or disease in the pelvic cavity, move the plates down over the hips in about the same way and same length of time, taking about thirty minutes for spinal treatment. Then move the positive current, after rinsing out the treating cloths, to the rear of the stomach on the spine lengthwise. Then take the B or negative current, and apply over the lungs crosswise.

In all applications, the strength of current must be gauged by the condition of the patient and the sensitiveness of the part diseased. Avoid strong currents

over the heart until you are certain there is no heart trouble.

Treat the lungs about five minutes, then move the plate lengthwise over the sternum or breast bone, letting one end reach the pit of the stomach. After a few minutes, move it crosswise over the liver, bringing one end around under the arm for the purpose of covering the whole liver. This end must be held by the operator, the other by the patient. In most places the patient can hold the plates better than the operator. Its pressure should be firm, so as to diffuse the current evenly, and they can take a stronger current with less inconvenience. If firm pressure is made on the liver, with a current that can be felt to vibrate and arouse it, there is more benefit gained. If the liver is diseased, it will pull up, if not, the current will be felt though pleasantly. It is only when glands and muscles are clogged with effete poisons, that they contract. When clear, the current runs like a deep stream of water, with very light ripples.

After treating the liver, move the plate over to the left side in the same manner—this will cover the spleen, the fundus of the stomach and the pancreas. In treating the heart, bring the plate over the left breast at right angles, letting the lower end of the plate cover the end of the heart, which is felt with some tenderness about two inches to the left of and lower than the left nipple. In this way it reaches the end of the heart that passes through the diaphragm. Give light currents when treating at this point. In this manner we can control pericarditis and all muscular diseases of the heart. If when treating at this point or at the stomach, the patient feels faint, no fears need be apprehended. Stop the treatment for awhile, or till the next day, as it seldom occurs but once.

For treating the bowels, if the patient has a pendu-

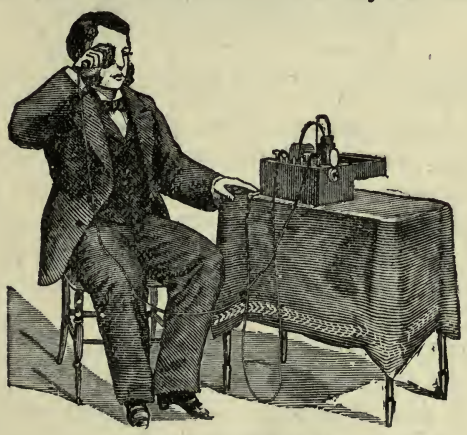
lous abdomen, a large plate should be used, about ten by twelve inches. The plate on the back can be left in the same position; it covers more nerve centers that control digestion, both spinal and sympathetic, than any other part of the spine.

In uterine diseases we give the whole general treatment from the vagina with the positive current attached to the vagina electrode, and the negative current attached to the plate, only moving the latter to the front of the body and spine; and if the uterus is the seat of the disease it will be cured by the time the general heal this regained. The local application will be found in chapter on uterine diseases.

We do not treat the limbs before the fourth time. If vapor, mineral, or electro-thermal baths are not available we give three general treatments, and on the evening of the third day a mild cathartic. The fourth day a bath is taken if possible; if not, then what is called an electrical sponge bath, by using a sponge as in diagnosing and sponging the entire body, arms and legs. While sponging the body, have the patient sit on the positive current. When treating the limbs remove the positive to the feet. If the feet are cold put them into a pail of hot salt water with the current in the water, and rub the limbs down with the negative. It will carry off the effete matter more effectually than the other method.

For treating the head either let the patient sit on the positive current, or attach it to a plate placed between the shoulders, as the closer the currents are together the more they are felt. The present mode of having one current at the feet, while giving general faradization, is only wasting time, as the benefit derived is nothing compared to that received when the currents are concentrated near and on the diseased parts. To give the base of the brain a thorough application, take the sponge in

the left hand, pressing it firmly to the back of the neck, first wetting the hair; put the right hand on the forehead so as to make the current felt through the entire back part of the head, down the arms and in the throat. This is not effected by the amount of current used but by the firm pressure. Frontal headache, catarrh, or pain in the eyes can be treated by having the patient take one end of the treating cloth in the right hand with the current enclosed in it, and the left hand holding the other end of the cloth. Have them rub around the eyes and over the nose with the left hand. Bring the right hand closer to the left until the current is felt pleasantly to the sore nerves. This is the way we give what we call *beauty treatment*, by rubbing the face with the cloth charged with electricity. It clears the complexion of yellow, moth, and pimples, if taken in connection with general treatment. The above conditions being caused by diseases of the digestive organs, to clear the complexion permanently they must be cured, or the local beauty treatment would go for nothing. Toothache, or neuralgia of the face can be treated in this way and cured.

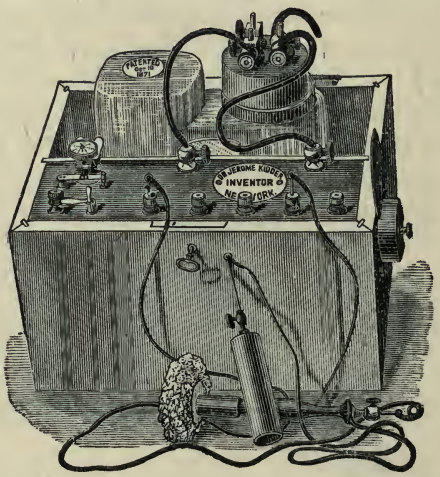


LOCAL TO THE EYE.

Here the currents are run in the wrong direction. The Positive should be at the back of the neck, the Negative over the eye.

CHAPTER XI.

BATTERIES AND INSTRUCTIONS FOR USING THEM.



MACHINE WITH TIP BATTERIES. PRICE, $24.

We call the attention of the profession and the invalid to the kind and quality of batteries shown in the following pages. They are so devised and are of such variety that they will meet the wants of both the physician and the family. So important is electricity that all are seeking and asking for new and better instructions in its application for permanently curing disease.

The objection to it constantly raised by physicians to their patrons is, that it is only a stimulant, and so benefits for a short time only. This assertion only proves their ignorance of the best modes of using it. If they will use it according to the instructions here laid down,

they will find it a permanent blood purifier. When the circulation is equalized and the blood pure a cure must be permanent, much more so than when drugs are used, none of the bad effects of medicine being left in the system.

There are many different kinds of batteries manufactured, and electricity is generated with different fluids and elements. The writer has had no personal experience with any except those in which electricity is generated from the Smee element, with sulphuric acid and water. This battery is easily kept in order and the expense is a mere trifle to keep it running. Kidder's is run with the above element. The Galvanic Company's and the McIntosh are carbon, and the fluid used is sulphuric acid and bi-chromate of potassa.

I have become satisfied that the mode of application is of more importance than the kind of battery used. All electro-magnetic machines must be understood, to be kept in order, and good care must be taken of them that they may be always ready for use. The elements must not be left in the fluids when not in in use. I keep a large cover over my batteries, in the shape of a box without a bottom, but with a lid to it. This I put over the battery on the office table when in use. No smell of the fluid comes in the room and it also keeps the dust out and prevents those who are treated noticing how the currents are used. Many think they are having a large battery used when it is only a No. 4 office battery. This size is large enough for all practical purposes. I sometimes use two and three elements connected, when I want more quantity and less tension.

The fault I find with all the electro-magnetic machines is that they make too many tension currents, robbing the primary current of quantity, so that it can

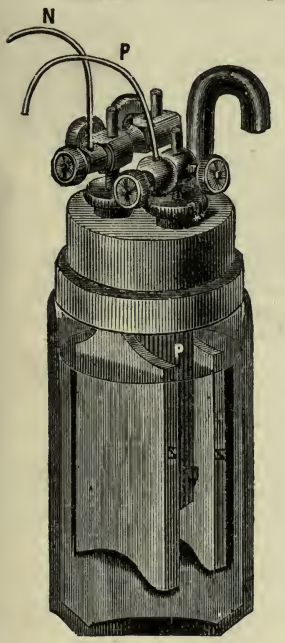
only be used with salt or more cells added. The secondary currents are of no practical benefit in the permanent curing of disease, as they only stimulate for the time. It is the use of these currents which has led to the present belief of physicians, that the benefit of electricity will not be permanent. I can do more in one week with the primary current than I can in a month with the secondary. It will not purify the blood; the primary will, if currents are run so as to carry the impurities into the capillary circulation, and the bowels and excretory organs are aroused to do their work.

I know that the manufacturers will not agree with me nor be pleased with these assertions, but this book is written to give to the world the truth as I see it. I have experimented over and over again and proved these facts. Many have given it up and say there is no therapeutic value in electricity, but this is not true. I know there is, and have *proved it* by permanently curing diseases of every description, and my patients gain more rapidly after a course of treatment is finished than while it is in progress. To be successful we must have the allotropic or chemical change we get from the primary current of the electro-magnetic machines. The galvanic battery gives the chemical change but does not stimulate the absorbents to carry off as fast as the former. I am certain there is a mistake made in manufacturing the strong tension currents. It costs more to make them and is a waste of time and material. It is an erroneous idea that we can get six and ten kinds of electricity when nature provides but three. It is too large a pill to take, even if it is sugar-coated. Let the batteries be manufactured with the primary and one secondary post. We would rather have one of that kind than a dozen six and nine current batteries, and we are told by the manufacturers we can have them made. We

intend to keep on hand all the best batteries, with and without strong tension currents, with instruments, elements, strings, and everything for repairing old batteries at manufacturers' prices. The price of this book is $2.50, but it will be sold to physicians with and without battery for $2.00.

Direct to Dr. S. E. Morrill or L. C. Abbey, agent, 533 John street, Kalamazoo, Mich.

Smee's element, used in Kidder's Apparatus. The zinc furnishes negative (N) and the platinum positive (P) electricity.



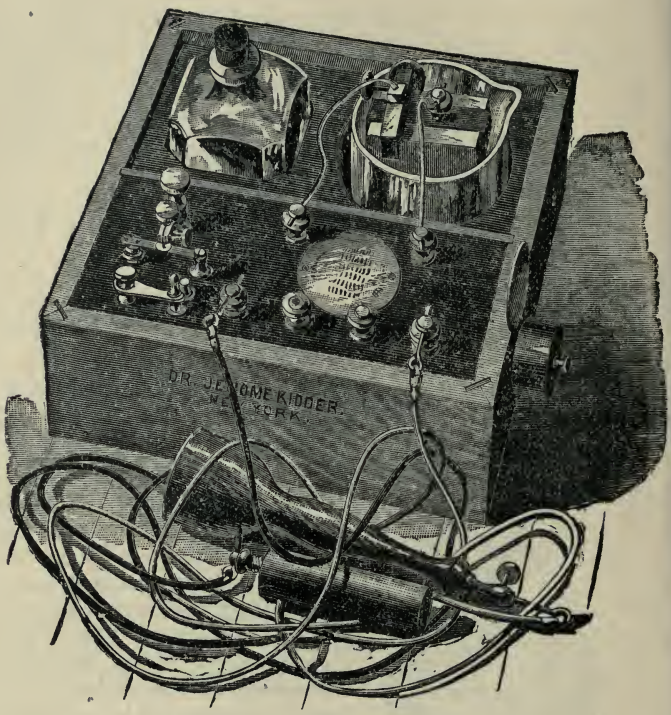
The electricity in Kidder's apparatus is generated by an ordinary Smee's battery.

Smee's element is represented in the accompanying cut. It is, on the whole, the simplest of all forms of batteries. It is composed of two plates of zinc and one of platinum, or platinized silver, held firmly together by a brass clamp, or rubber stopper, and acted upon by a solution composed of one part sulphuric acid to eight parts of water. When the element is in action hydrogen escapes from the surface of the platinum.

It is necessary to understand at the outset the distinctions between the terms employed in describing an apparatus for the faradic current.

The *battery* is the zinc and platina in the solution. It is sometimes called the *element* or cell. The *helix* is the coil of wires, boxed, and covered by a movable metallic tube.

The two together constitute the *machine* or *apparatus*. The term battery is very frequently, though incorrectly, applied to the apparatus or machine.



No. 4.

OFFICE AND FAMILY MACHINE SHOWN WITHOUT THE LID.

No. 4 has three coils, and six variations of the qualities of the currents, and is operated by one open battery which is for weeks and months constantly ready for use, without changing the fluid, and a bottle accompanies, into which the fluid can be poured whenever desired. Price, with switch arranged to use the second coil in the primary circuit, when desired, $20.00.

Price without switch arrangement, $18.00.

We also put the No. 4 machine in the same size case as No. 5. and supply with it a Tip Battery. Price complete, $24.00.

In many of the ordinary machines the rheotomes are very capricious and unreliable, and their adjustment severely taxes the patience, and not unfrequently has permanently discouraged physicians from making any experiments in electro-therapeutics.

This apparatus has three coils of wire.

A B gives an induced or secondary current of high quantity and low intensity, and also the so-called *extra current*—that is, the current induced by the inner coil on its own windings.

B C gives an induced current of moderate quantity and moderate intensity.

A C combines A B and B C, but does not give the full quantity.

C D gives a current of high intensity and low quantity.

A D gives the whole power of the apparatus—low quantity and high intensity.

The battery and helix, conductors and electrodes, together with a bottle for holding the solution, are all enclosed in a small box, which, when provided with a handle, as it should be, is very conveniently portable.

The advantages of this apparatus are these:—

1. It is simple in its construction and easily managed. Smee's is the simplest of all batteries, and requires but little attention to keep it always in working order.

2. The qualities of current that it affords are better adapted for the various purposes for which the faradic current is employed than those of any other apparatus with which we are acquainted.

3. *It is reliable.*—A very prominent fault with most of the faradic instruments is uncertainty of action. To meet the wants of the practitioner an apparatus should at all times be ready for action, and should give a current of sufficient power to meet every possible requirement of which the faradic current is capable. The department of electro-therapeutics has been greatly retarded by the uncertainty of the apparatus employed, and the annoying difficulties attendant on their management. A machine that is properly constructed should give a current of at least moderate strength, even when it is not kept absolutely, faultlessly clean. The practitioner may be assured that if a machine requires constant cleaning, watching, and adjusting, there is somewhere a fault or deficiency in its construction.

The apparatus we have been describing is reliable at all times, even when it has been long neglected; it gives a much stronger current, however, when it is new and clean, when the solution is fresh and strong, and the connecting wires

are bright and polished, than when the opposite conditions exist. And yet the overworked practitioner or specialist, for whom it is impossible to keep all portions of the apparatus in perfect order, will not usually be disappointed, in operation, and will find that even with tolerable care it will serve its purpose for many years.

RULES FOR THE USE AND CARE OF THE APPARATUS.

To prepare the apparatus for use.—Fill the glass cup with a solution of water and sulphuric acid—one part sulphuric acid to eight or twelve parts water. It is not necessary to be rigidly mathematical in regard to the quantity of the sulphuric acid. The average proportion is one-tenth, but it may range between one-sixth and one-sixteenth.

It is also necessary to put about a teaspoonful of quicksilver in the cup. This touches the lower end of the zincs and keeps them constantly amalgamated. Amalgamation is necessary in order to preserve the zincs from too rapid destruction, and to prevent the branch currents that may arise through the impurities of the zinc. In order to amalgamate zincs, before they have been used, it is necessary to first moisten them with a weak solution of sulphuric acid before pouring on the mercury.

The quicksilver should not be allowed to touch the central plate of platinum, as it may injure it.

The jar should be about two-thirds filled with the solution.

Unite the two pieces of zinc with the platinum between them by means of the brass clamp; put the element thus formed in the solution. Now unite by a brass wire the top of the clamp with the brass post marked N on the left of the helix. Unite the platinum with the brass post marked P on the right hand of the helix.

If the spring does not at once vibrate, give it a slight stroke with the finger. If it still refuses to vibrate, it may be necessary to readjust the screw. If the spring vibrates, but irregularly or too slowly, the evil may easily be remedied by re-adjusting the screw.

Now connect the strings attached to the electrodes with the lettered posts. A is always the positive pole, and B, C, and D are always negative relatively to A. It is always possible to distinguish the negative pole by holding the elec-

trodes for a moment in the two hands; the one in which the current is strongest felt is the negative pole.

If the apparatus refuses to go or if it stops at any time while in use, the cause may be looked for—

1. *In the screw of the rheotome or current breaker.*—This may not be properly adjusted. The point may be too far from the spring, or too closely pressed upon it. This want of proper adjustment of the screw is the most frequent cause of a stopping of the machine, and of the refusal of the spring to vibrate. The spring may sometimes be corroded at the point where the screw touches it.

2. *In the connection of the wires.*—The wires that unite the zincs and platinum may not be properly screwed at their point of connection.

3. *In the battery itself.*—The battery—that is, the zinc and platina, with the solution in the glass jar—may get out of order in two ways. *First*, the solution may lose its strength. This difficulty may be remedied either by pouring in some sulphuric acid or making an entirely new solution, or by simply adding more water. *Secondly*, the zincs may become so corroded and incrusted as to become incapable of generating a current. When we have reason to suspect that such is the case we should clean them with an old tooth-brush or cloth, or amalgamate them by first dipping them in the acid solution and then pouring over them a small quantity of mercury. The platinum and the zincs will in time, by hard and long usage, wear out, and will need to be replenished.

4. *In the helix.*—It is very rarely indeed that the helix of this apparatus ever becomes so injured as to become incapable of service. If, after we have properly adjusted the screw and spring, made sure of the connections of the wires, replenished the solution and cleaned the zincs, the apparatus persistently refuses to go, we have reason to suspect that something may be wrong with the wires that compose the helix. If such be the case the evil can be remedied only by the inventor himself, or, at least, by some one practically familiar with the construction of helices. But we should try very patiently and perseveringly before we accept the conclusion that the helix is thus out of order, for it is an accident of extremely rare occurrence.

When no current is felt at the electrodes, although the apparatus acts properly, we know that *the connection is broken somewhere in the insulated conducting wires.* Some

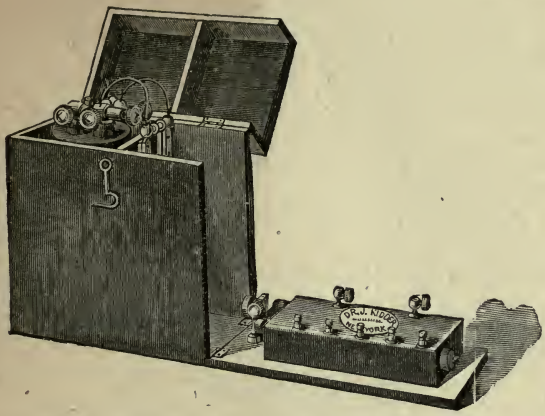
times the union of the wires with the electrodes is imperfect, and occasionally the wire in some part is broken. It should not be forgotten that the poles can always be distinguished from each other by the fact that when the electrodes are held in the hand *the current is felt most in the negative.* Finally, the electrodes themselves may become very much corroded, and may need cleaning before a good current can be obtained.

To take care of the apparatus.—When not in use, the element can be taken out of the solution and rested on the top of the glass jar, or placed in another jar or cup of water. If the element remains too long a time in the jar an incrustation of salt will sometimes accumulate on the top of the zincs, which will need to be brushed or washed off. This salt is the sulphate of zinc, resulting from the action of the sulphuric acid on the zinc.

Methods of modifying the current.— The strength of the current of this machine may be modified in several ways, as follows:

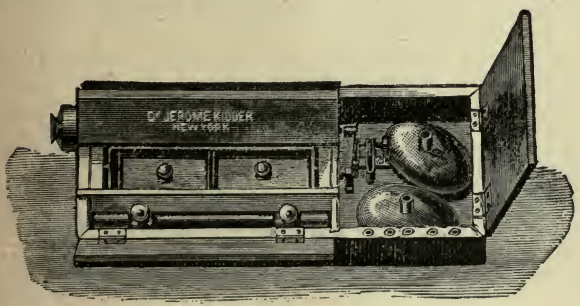
1. It may be modified by withdrawing or pushing in the metallic tube that covers the helix, or by moving the switch from one post to the other.

BEARD & ROCKWELL.



No. 2. Physician's Visiting Machine.

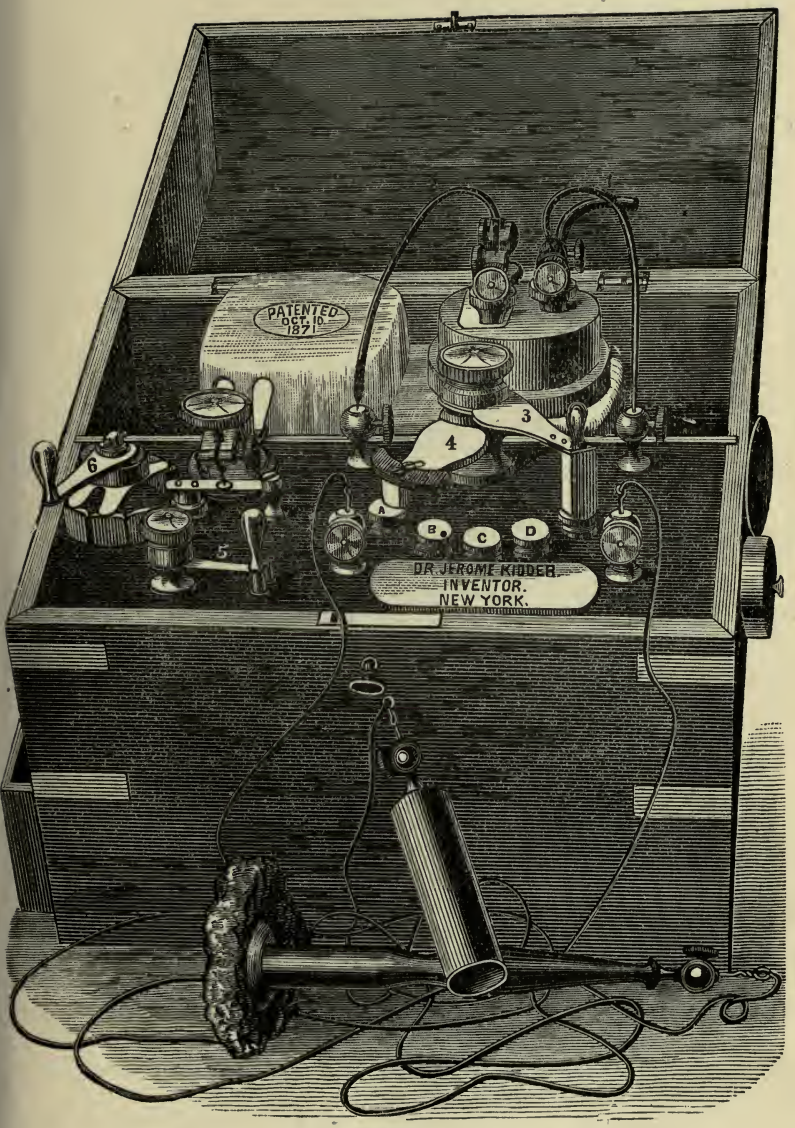
No. 2 is a four coil apparatus, producing ten currents of electricity, of compact form, with an upright stopper battery, constantly ready for use many weeks without any attention. The coil-box stands upright in one end of the case where it is hinged. By springs underneath the hinges that fasten the coil-box to the case, the battery is connected to operate the coils, when turned down to a horizontal position, as seen in the figure. If ever desired, the coil-box can be detached and connected with any other battery by the two screw cups on the back part. This machine is about 6 inches long, 3½ wide, and 6 inches deep, and has a metallic handle on the lid for carrying. It costs as much, if not more, to put the qualities of the ten currents in a small machine as in a large one. Price, $27.00.



A superior Pocket Induction (Faradic) Apparatus, having very expensive coils so as to get the desired ranges in the qualities of currents, in a very small space. It operates by means of a very little bisulphate of mercury, gives very strong power, and is more satisfactory in its operation than any other pocket apparatus made in any country. Two handles and sponge-clasps with conducting cords accompany each apparatus. Price with three coils and six different qualities of currents, $20. Price with four coils and ten different qualities of currents, $24.00.

The American Pocket Battery. Price, $10.

This is the most convenient pocket battery in the market for the price, as it has a closed cell, and the physician can put it in running order before leaving his office.



No. 1—Physicians' Office Electro-Medical Apparatus.

No. 1. Physicians' Office Electro-Medical Apparatus, large size, having four coils and ten currents.

Polished walnut case, with brass-bound corners, and drawer underneath the helix. Size of case, 10½ inches long, 9 wide, and 7½ deep. The brass works are nickel plated. Price, including handles and sponge-holder, $50.00.

Veneered rosewood case, bound and ornamented with German silver. Price $57.00.

DIRECTIONS FOR GALVANO CAUTERY BATTERY.

Solution

Is composed of bi-chromate potassa, sulphuric acid and water. To two ounces of bi-chromate potassa, dissolved in 15 ounces boiling water, add when cold 6 ounces Commercial Sulphuric Acid.

This quantity is sufficient to charge the two cell apparatus.

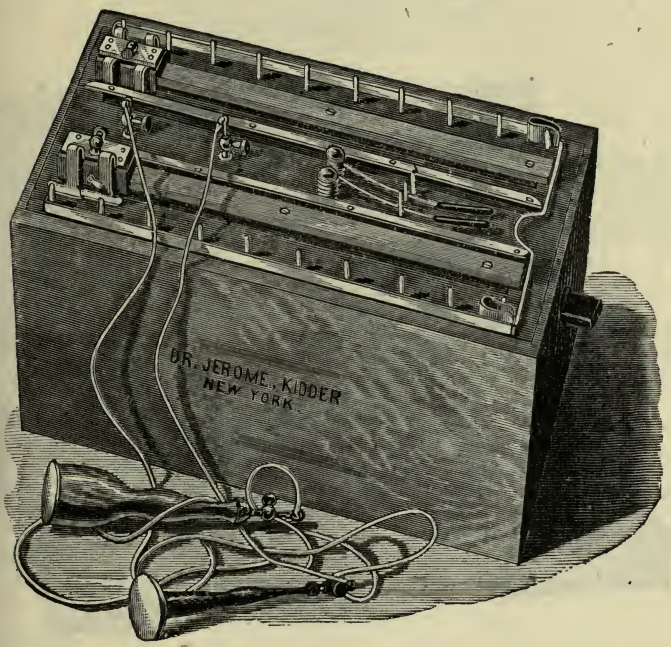
Each cell contains about 11 fluid ounces. This solution can be made in large quantities and put away (well sealed) for future use.

The following formula will make one gallon:—16 ounces bi-chromate potassa, dissolved in 6½ pints boiling water, add when cold 1½ pints commercial sulphuric acid.

Zincs.

The zincs will occasionally require re-amalgamating, to protect them from rapid decomposition. This can be done as follows:—Immerse the elements into the solution for a minute or two, until action takes place, then place into a saucer or shallow vessel of glass or earthenware, sufficient mercury to touch the lower ends of zincs, which will absorb the mercury and cause it to spread over the surface of the zincs exposed to the action of the solution.

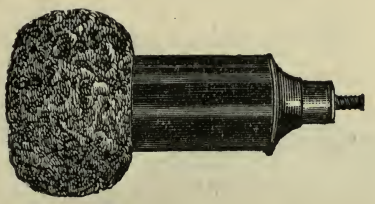
Care should be taken not to allow the mercury to touch the platina plates.

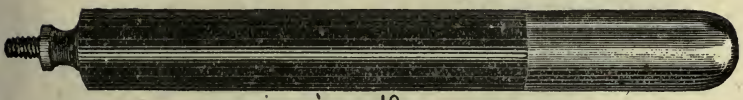


Dr. Kidder's Galvano-Caustic Batteries are unequaled as to their efficiency and convenience of operation. The elements are made movable horizontally in their relation to the fluid of the cells, so as to substitute continuously battery fluid which has recovered its allotropic power from having been released from action. One of these forms, consisting only of two cells, each 3¼ inches long, 2¼ inches wide and 4½ deep, will retain a platinum wire No. 19 at a white heat constantly for more than a quarter of an hour.

Case of Appliances.

Containing Vaginai, Uterine, Rectum, Spatula, (Tongue Eye, Ear, Brush, Sponge Clasp and Universal handle, in neat Morocco Case, Velvet lined. Price, $15.00.





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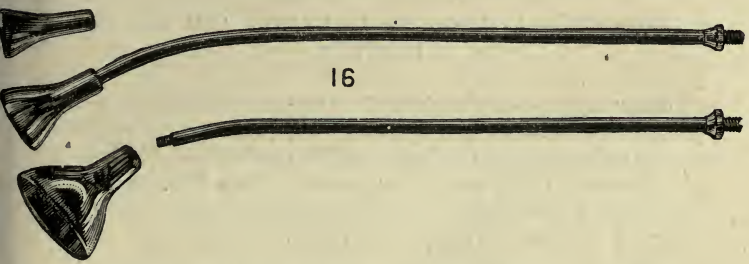
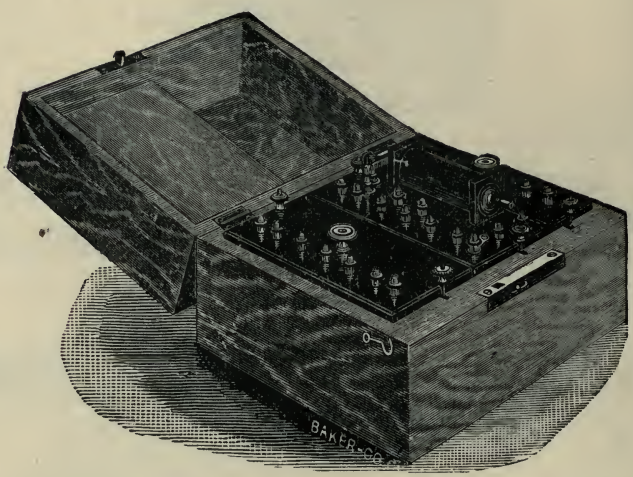


16

Holder for large sponge with universal handle	$1 50
" " " without handle	1 00
Sponge-Cup with universal handle	1 00
" without handle	50
Ball Rectal Electrode (insulated)	1 25
Rectal Electrode, nickle plated	1 25
Rectal Electrode, Insulated with Polished Hard Rubber	2 00
Rectal Electrode, large, nickel plated	1 40
Vaginal Electrode, nickel plated	1 50
Vaginal Electrode, Insulated with Polished Hard Rubber	2 50

McINTOSH'S BATTERIES.



TWELVE-CELL COMBINED GALVANIC AND FARADIC BATTERY.

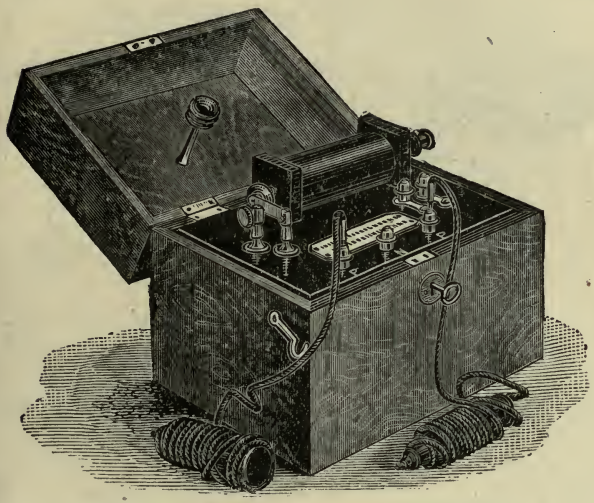
Same style of case and finish as the above (but two inches longer), with first-class Faradic Coil, polished hard-rubber ends and cover, extra large cell to run the coil, electrodes, and our new cable conducting cords. This battery gives a galvanic current same as above described, and a Faradic current of sufficient strength to treat any case.

Price.....$40 00

TWELVE-CELL GALVANIC BATTERY.

In a polished black-walnut case, 9 inches long, 8 inches wide, 8 inches high, metal work all nickel plated, lock and handle, sponge electrodes, and cable conducting cords. This is a very convenient visiting battery, as it weighs only eleven pounds, and gives a strong galvanic current.

Price.....$30 00.



McIntosh Family Faradic Battery.

There is a constant demand for a low priced Faradic Battery; not a mere toy, such as are offered to the public, but one made of good material, in a substantial manner and that will give a smooth, even current, suitable for family use. This has induced us to make the above battery, which we believe will meet this want.

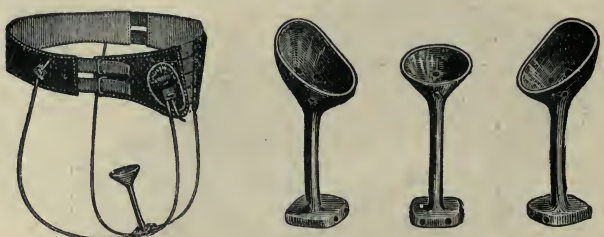
It is made on the same principle as our higher priced Faradic Batteries, and is portable. It is not intended to take the place of the Physician's Battery, but for domestic use.

It is put up in a neat black walnut case, 6½ inches long, inches high and 5 inches wide, with lock and handle, and furnished with electrodes and conducting cords; all the metal work is finely nickel plated.

No one can contradict us, when we say that no portable battery of the same quality, is, or has been sold at the low price we offer this one.

Price..... $10 00
Large Size..... 18 00

A FEW OF THE REASONS WHY THIS INSTRUMENT IS USED IN PREFERENCE TO ALL OTHERS, ARE:



1. It is an Abdominal and Uterine Supporter combined.

2. *It is simple in construction.* The abdominal support is a broad morrocco belt, with elastic straps to buckle around the hips, with concave front so shaped as to hold up the abdomen. The uterine support is a cup and stem, made of hard rubber, and attached to the belt by elastic rubber tubes.

3. *Convenient to apply and wear.* The uterine support (cup and stem), being composed of light vulcanized rubber, with a highly polished surface, has no joints or crevices for secretions to collect. The cup is so constructed that all secretions from the womb will readily pass out. The stem is elastic, and by heating over a lamp can be bent to any curve desired, and retain the curve when once changed. It will not corrode like those composed of silver and other metals, but after being worn for years will retain its original polish.

4. *Happy in its adaptation.* The cup is not a perfect circle, but flattened to fit the neck of the uterus, which has as definite a shape as the hand or foot.

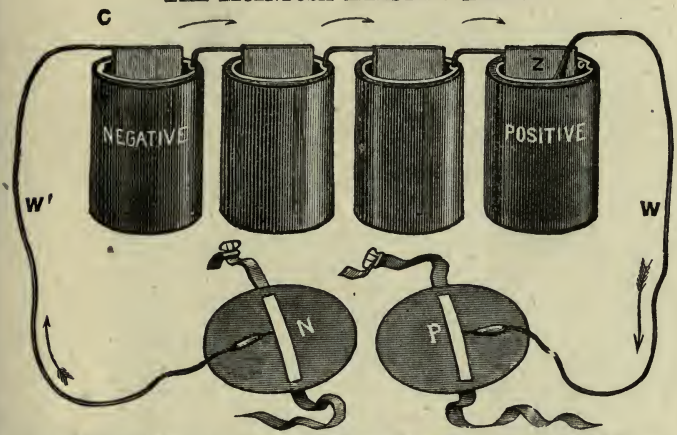
OUR PRICES ARE:

	To Physicians.	To Patients.
Instrument separate (which is the belt, cup, stem and tubes)	$6 00	$10 00 each
Abdominal Supporters, separate	3 00	5 00 "
Cup and stem "	3 00	5 00 "

Rubber tubes twenty-five cents per pair.

Instruments sent by mail at our risk, on receipt of price.

The McIntosh Electric Belt.

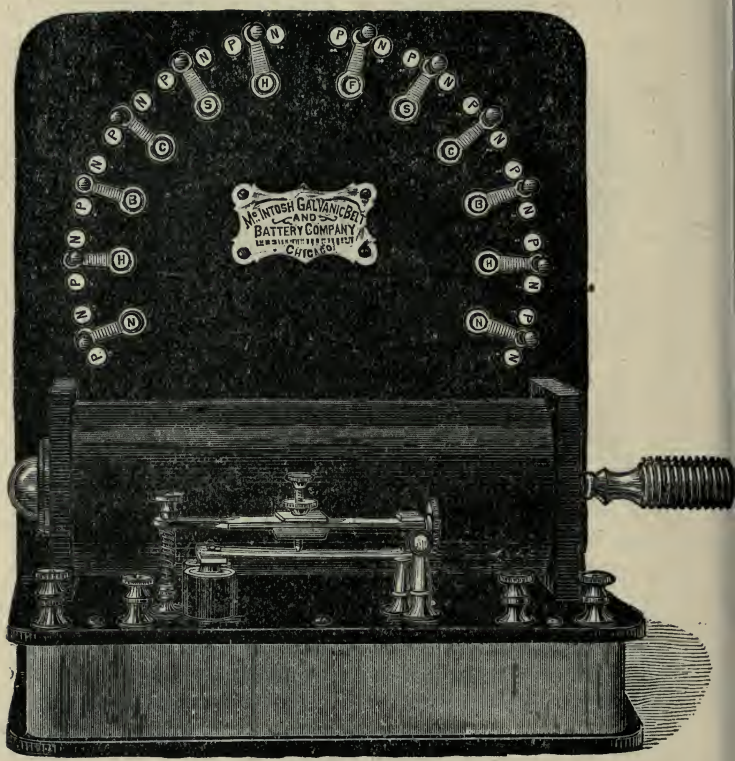


This cut represents a section of cells from the McIntosh Electric Belt; Z, zinc in the positive cell; W, wire connecting cell and positive electrode plate P; C, represents copper lining of the negative cell; W', wire connecting with the negative electrode N.

This belt has been carefully devised by Dr. L. D. McIntosh for the purpose of meeting all the wants of a mild galvanic battery. The belt consists of a combination of cups or cells placed in pockets on the belt, thus forming a complete galvanic battery. Each cell is composed of hard rubber lined with copper, which metal constitutes the negative plate. The cells, being covered with hard rubber, are perfectly insulated, or, in other words, do not permit the electric current to pass only on the conducting wires from the poles of the battery; plates of zinc of the proper size and thickness are wrapped in a porous material and placed in the cells; a wire soldered firmly to the zincs connects to the copper of the cells in such a manner as to give a hinge motion, thus making the belt pliable. By simply dropping a few drops of dilute vinegar in each cell the electric current is generated, and will continue uninterrupted for twenty-four hours. The power of the current is to great that it will decompose water.

It gives a strong or weak current. If a weak current is desired, less cells should be included in the circuit (see directions). The electrodes, or pieces of metal connected by wires with the cells to convey the current to the body, allow of application to any part; the current can be used locally, or the whole system can be brought under its influence. It is light and no discomfort whatever to the wearer.

Price.... .....$10 00



FARADIC BATH APPARATUS.

Our Faradic Bath Apparatus is very complete in its arrangement. The Faradic coil is nearly twelve inches long and three and one-half inches in diameter (with polished hard rubber ends and cover), placed on the shelf of a hard-rubber bracket. The vibrator, magnet and binding posts are placed on the shelf in front of the coil. Twelve switches are placed on the perpendicular plate of the bracket in circular form. Each switch has a positive and negative connection with its electrode in the bath tub. By this arrangement they can be used as pole changers. This bracket can be placed on a table or wall in convenient proximity to the bath tub, and is the most convenient arrangement ever designed. It is very ornamental. The coil, with polished hard-rubber ends and

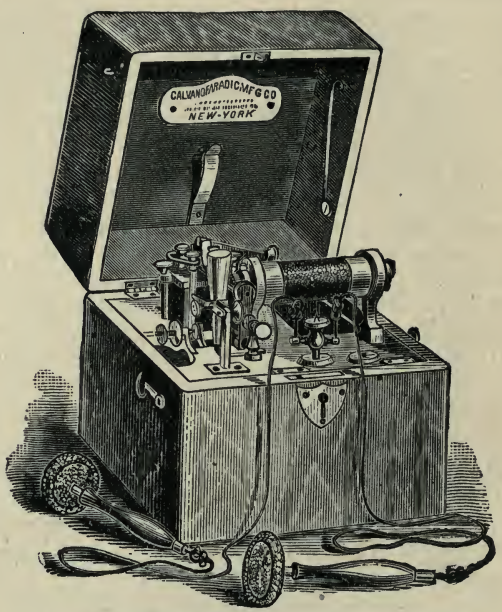
cover, produces a fine contrast with the nickel-plated metal of the vibrator, binding posts and switches. The primary and secondary wires in the coil are proportioned in length and size, so as to produce a quantity current very powerful in its character. It penetrates the innermost tissues of the body, and is free from the sharp, stinging character to be met with in many kinds of bath apparatus, having coils of great intensity without regard to quantity. The position of the vibrator and binding posts in front of the coils and switches just above it, are very convenient to the hand of the operator. The shield is nickel-plated and graduated. The current increases in strength as it is withdrawn from the coil, and, by its intelligent use, any strength of current can be obtained, from one scarcely perceptible, to one so powerful that the strongest person can with difficulty endure it.

The switches are arranged in circular form. The one at the top marked H, connects with the head electrode in the tub. The one marked F, with the foot electrode. Those on the right side, with electrodes in the tub on the right side Those on the left, with the electrodes in the tub on the left side, as follows: C, chest; S, stomach; B, bowels; H, hips and K, knees.

By means of these switches, the current can be directed through the patient in any direction, and its polarity changed at will in an instant. The dry current can be taken from the binding posts by means of conducting cords and handles, and applied the same as from an ordinary Faradic coil.

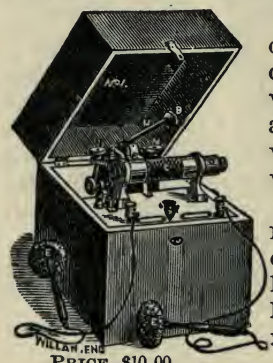
We furnish with our bath apparatus a large, powerful gravity-cell 18x18 inches, and 8 inches deep. This cell will run for months with very little attention. The elements remain in the fluid and there is no action on them when the battery switch is turned off. The tub electrodes are highly finished and nickel-plated. The tub is usually made six feet four inches long, four feet six inches on the bottom, sixteen inches wide at the foot, and twenty-one inches at the head, with a slight taper toward the bottom. It is usually made of wood, as it is cheaper and just as good. If desired, we can furnish tubs made of soapstone or porcelain.

We can vary this apparatus to meet the wishes of any customer at corresponding rates. Price, complete as above described, $250 00.



GALVANO-FARADIC MANUFACTURING CO.

DESCRIPTION.—Fig., "E," Electrodes; "H," Hinge-rod; "C," Coil; "D," Cylinder; "NN," Nuts holding rubber cap or Hydrostat A tight on cell; "P," Platina Point to regulate vibration of the vibrator; "V," Vibrator; "A," Hydrostat, or Portable attachment; "B," Nut on Hinge-rod H; "X," Current Changer. Price, $20.00.



PRICE, $10.00.

BATTERY FLUID.—To three pints of cold water add five fluid ounces of commercial sulphuric acid, and when this becomes perfectly cool add thereto six ounces of finely pulverized bi-chromate of potassa. Mix well.

TO PREPARE MACHINE FOR OPERATION.—Remove small pin from end of box which secures the platform; lift platform out of position by lifting out the coil; unscrew the nuts, "NN," and raise elements

which are attached to hard rubber cap on neck of cell; take out the cell, and fill the same with ten fluid ounces, or two-thirds of large or lower part, with battery fluid; replace all as before.

To Put into Operation.—Raise the end of hinged rod, and with it lower the zinc-plate attached to it down into the Battery Fluid. A slight jar of the box will start the machine into action.

The Primary Current (mild) is obtained by fastening the Tips at the ends of the cords which are attached to the handles with sponges, into binding posts Nos. 1 and 2 on platform, and by drawing out, or to the right, the Sliding Cylinder, the strength of the current is increased.

The Secondary Current (strong) is obtained by fastening the Tips at the ends of the Cords which are attached to the handles with sponges into binding posts Nos. 2 and 3 on platform. The strength of the current is increased by drawing out the cylinder same as in primary.

The combined Primary and Secondary Current is obtained by fastening the Tips at the ends of the Cords which are attached to the handles with sponges, into binding posts Nos. 1 and 3 on platform. The strength of the currents is increased by drawing out the cylinder same as in primary.

To Attach a Zinc Plate.—Remove the elements from the cell; then remove the nut of the hinge-jointed rod "B," draw the rod down and out, unscrew the zinc from the same, and put on a new one.

When the currents and vibrations seem weak, it shows that either fresh fluid or a new zinc is needed. The zinc being good, the fluid fresh, and the vibrator in motion, show that the conductors are in fault. Test: place one finger on the right-hand and one on the left-hand post; if you find the current passing, the instrument is perfect.

To Regulate the Vibrations.—Care should be taken not to turn the platina point screw "P" so tight against the disk on "V" that it will press or impinge closely against the magnet or end of coil; turn screw backward until the vibrations are regular.

Sometimes, in transportation, the adjustment of the machines may be disarranged, in which case readjustment is necessary. This is best done (and whenever adjustment is needed) as follows:

Move the platina point screw backward or forward until the electric spark is evolved freely on the movable disk attached to vibrator, which causes the hammer to vibrate rapidly.

The disk against which the platina point impinges, where the electric spark is evolved, may, in time, become oxidized, causing the shock to be irregularly generated. This can be instantly remedied, as our disk, being movable, may be turned a very little round on its pivot, whereby a fresh surface of its periphery will be presented to the platina point.

Do not wind up the conducting cords unless when necessary to carry them about. When not in use they should be hung up; continued winding injures and breaks the wire.

The instument should be kept dry and clean. The zinc-plate should be drawn out of the fluid immediately after using. Never fill the cell so full that the fluid will touch the zinc when it is raised by the hinged rod.

TREATING CHAIR.

For the comfort of the patient the treating chair should be made of springs and hair, and easily adjusted. We use an old-style invalid chair, said to be manufactured in Boston, but by whom we do not know. It is of hair cloth, provided with springs, and is without screws or any complicated machinery: cost, $38. The weight of the patient holds the chair down. When I wish to change the plates I lift the back up with a slight effort, or if the patient raises up the chair comes up with ease. There is a foot-board to keep them from slipping down, and hot soap-stone can be conveniently applied to the feet while under treatment. The height is such that the electrician can give the treatment without stooping, making it more convenient for speculum examinations. The wrappings can be kept around patients without any trouble. Marks' surgical chair is the best one that I know of, after the common invalid chair, but it is complicated. A lounge or bed, or a high-backed cane-seated chair can be used, but the above is better.

ELECTRIC OR MAGNETIC PILLS.

I have used these pills for years in connection with my treatment. They act in harmony with electricity. They are perfectly assimilated and cause no pain, and their action is not too strong. They are a vegetable pill, with no blue mass or mineral substance in their composition. A box of these pills with a battery will cure many complicated diseases, and can be used by a non-professional if the currents are used as directed, and the pills taken with third treatment, as directed in chapter on general treatment. Price per box, 25 cts.

GLOSSARY.

The substance decomposed by the electricity is called the *Electrolyte.*

The terminations of the metallic conductors through which the current passes in and out, are called *Electrodes* (or *roads of electricity*). That through which the electricity passes into the electrolyte is termed the *Anode* (road up), and that through which the current passes out, the *Cathode* (road down). The electrolyte is always decomposed into two parts, one of which appears at the anode and the other at the cathode.

In the experiment of decomposing water, the water would be called the electrolyte; the decomposition of the water, electrolysis; the pieces of platinum connected with the battery, electrodes; the one connected with the positive pole, the anode; that connected with the negative pole, the cathode. The oxygen which appears at the anode, the anoin; and the hydrogen which appears at the cathode, the cation.

Every chemical compound which is a conductor of electricity is an electrolyte when in a liquid state.

Constant Battery. One capable of giving a contiuous current with unvarying constancy.

Continuous Current. Term applied to the galvanic current in opposition to the electro-magnetic.

Current Selector. A contrivance for bringing any desired number of elements into the circuit.

Commutator. An arrangement for reversing the current.

Electrode. An instrument for the application of electricity.

Electrometer. An instrument by which the force of an electric current is measured.

Element. Couple, pair or cell.

Electrolysis. Electro-chemical decomposition.

Electroscope. Same as Galvanoscope.

Faradic Current. The induced current. The term is applied both to the electro-magnetic and magneto-electric currents, since they were both discovered by Faraday. Called also secondary, interrupted, induced, inductive, to and fro, indirect, electro-magnetic and magneto-electric. The term Faradic is more universally used.

Faradization. The use of the Faradic current.

Galvanoscope (Galvanometer). An instrument by which we detect small quantities of electricity and distinguish between negative and positive.

Hydrostat. An arrangement to prevent accidental escape of battery fluid from the cells.

Interrupted Current. Broken, intermitted. The Faradic is necessarily interrupted by the apparatus that generates; it the galvanic may be continuous or interrupted.

Insulator. A poor conductor of electricity.

Insulated. Placed on non-conducting supports, or covered with non-conducting substances.

Labile Current. An application in which one or both the electrodes are moved or glided over the surface.

Magnets. Substances that have the property of attracting iron.

Primary or Inducing Current. The current that passes through the inner coil of wire in a helix, and that induces a current on the coil that surrounds it. Used erroneously as synonymous with galvanic or constant current.

Rheotome. A current breaker.

Rheotrope. Current reverser.

Secondary Current. That which is supplied by the outer coil of the electro-magnetic machine.

Static Electricity. Electricity generated by friction.

CHAPTER XII.

A NEW THEORY OF THE SOURCE OF CIRCULATION OF BLOOD CURRENTS.

From the (Washington) National Republican.

We propose to present this subject as compactly as possible, and consequently we shall speak only of those facts that are necessary for a true appreciation of this new science, and only of that which has a practical bearing upon this subject. Does the heart cause the circulation of the blood? or the electric and magnetic forces of the body? Every standard physiology and anatomy used in our medical colleges teaches Harvey's theory of the circulation. He assumed that the heart circulates the blood upon the hydraulic or vacuum principle, and the heart, to accomplish this, exerts a force of more than one hundred thousand pounds. Grant the heart to be the strongest muscle in the body, who can believe its motive power to be equal to forty tons? We claim the heart receives its motive power from the brain and other nerve centers, and that that power is electro-magnetism. We have proven to our satisfaction that the whole human body is a battery controlled by the brain. This battery generates all the three kinds of electricity—static or frictional, by the physical motion of the body; the galvanic by the acids and alkalies as generated from the serous or mucous surfaces. The voltaic pile is the brain, with its gray and white matter, supplying heat from the cerebellum to the circumference of the cerebrum.

This animal electricity is controlled by the mind, through the spinal cord or main telegraph wire, and its thousands of branches of motor nerves, nerves of sensation and nerves of special sense. Examining, microscopically, the gray matter, we find it to be composed of cells, while the white matter consists of fibres. The functions of the two are entirely different; the gray matter is the generator of nerve force, while the white is only the conductor by which the force is distributed to the nerves, and from thence to all the glands and organs of the body. We have no evidence that the mind can exist without the nervous system, or that the heart can perform its functions without the same. The system has two distinct circulating systems; the positive or arterial, which is ever flowing from the heart toward the extremities; the second is the venous or negative, which is ever flowing from the extremities toward the heart. These views of the circulation are strengthened when we know that the nerves of involuntary motion accompany the arteries and do not the veins. The arterial blood is carried to the capillaries and the nerves attending them give the motive power to build tissue and to repair waste places, while the veins gather up the waste and impurities and carry the venous blood through the heart to the lungs.

And, further, this theory is strengthened by the fact that the blood contains a certain portion of iron, and iron becomes a magnet only by induction, and loses its magnetic power the moment the electric current passes from it. Hence the blood, through the agency of the iron it contains, assumes a positive state at the instant it receives the electric charge from the iron at the lungs. It can then pass into the arteries and by induction throw off its electricity into the nerves, and then the blood will again assume a negative state as it enters the veins. As the venous blood has no electricity to throw off, it of

course needs no attendant nerves to receive the charge. The blood is now negative, and, as the lungs by inspiration are kept in a positive state, the venous blood returns through the right auricle of the heart to the lungs. We have proven these assertions by a long and practical study; not by reading alone but by scientific investigation of experiments from eanectrical standpoint. And not only as to how the blood circulates but how to reinstate imperfect circulation. That this mode of treatment is effectual hundreds of patients can testify who by overworking the brain have exhausted the electro-magnetic forces, and who by calling an excessive amount of blood to the brain caused sleeplessness and cold hands and feet. We, by applying the tonic current of electricity, aroused the electro-magnetic forces and changed the current of the blood to the extremities and relieved the brain, by this means establishing the circulation; and this can be accomplished in three days, and often twenty minutes. Treating the ganglionic center of the fifth pair of nerves will produce sleep when the patient has been without sleep for weeks. From the above facts we must conclude that the same principle that causes the negative and positive forces to rush together causes the circulation: that is, electrically the blood circulates, and electrically it recedes and returns to the lungs through the two ventricles of the heart. The heart does not circulate the blood but is the regulator of this ever-flowing stream.

Dr. S. E. Morrill.

CHAPTER XIII.

DISEASES OF CHILDREN.

One of the greatest wants of the age is health, a sound mind in a sound body. Many parents have brought into the world feeble children, because the laws of life were not understood. Many have consigned their loved ones to an early grave through ignorance of the laws that govern the true development of a healthy child.

It is of essential importance to know that pure air, cleanliness, suitable clothes, and natural food are indispensable to the health of children. It is a law of nature that should be better understood, that marriage of like temperaments should never be consummated, for healthy children can never be developed from such parents; neither can they from incompatibility in ages.

More than half of the diseases children suffer from are caused by injudicious treatment received at the hands of fathers and mothers. Society as it is to-day furnishes instances of grievous wrongs done children by their parents. That large quantities of unwholesome food eaten at irregular hours cause unnatural appetites and impair digestion, cannot be denied. If death comes to the household and snatches a loved one, the thought never occurs to them that they, in their ignorance, laid the foundation of the disease, by destroying the digestive organs, by giving food only fit for adults. Mother's milk is the best food, but this is not all the requirements necessary to mature healthy children. The mother must regulate her diet to the wants of her chil-

dren, and moderate exercise, fresh air and a cheerful temper are necessary. Children have been thrown into convulsions by nursing immediately after the mother had been frightened or had been in a great passion.

The food after a child has been weaned should be as much like the mother's milk as possible. Oat meal produces muscle, digests with ease, and children will eat it, as a rule, with relish if their appetites have not been perverted by improper food. Do not give potatoes or meat or anything considered indigestible; keep the children away from the table until over two years of age, and the prevailing infantile diseases will grow "beautifully less." The first milk from the breast is the only physic that is necessary for infants. Never put a spoon in their mouths. Children who are fed on milk alone and not on "spoon victuals" will cut their teeth without any difficulty. Should it be necessary to feed anything, as is sometimes the case, pure, new cow's milk will be better than any of the prepared food found in the stores. Milk is the birth-right of the child. Nature has established this fact, and nothing else can fill the requirements. Under the prevailing mode of feeding, dressing and dosing children, it is a wonder one child is left, so often are the laws of health disregarded. The use of powder is another serious detriment to the child, as it closes the pores of the skin. Pure water and drying thoroughly is all-sufficient.

When, however, children are sick we hope every mother will use electricity to restore them to health. Mothers, make this a part of your education. We hope to have machines with instructions so plain that they can be adapted to children from birth, and believe the time is not far distant when every family will believe a battery is as necessary as a cook stove. I treat infants for all diseases, and know from a positive knowledge, that it is less harmful than homeopathic medicine

because it arouses the natural and normal condition necessary to perfect health.

Do not go to the extreme in the dress of a child. It should be loose and warm. Do not roll them in a blanket, excluding all fresh air, for they need it as much as an adult, and by covering them head and feet the same atmosphere is breathed over and over. Everyone knows this is not healthy; it produces colic and many other derangements. Have fresh air in the sleeping rooms. Cover warm but let the air be pure. Flannel by its protecting power is the best adapted to children for covering or clothing. It is also a non-conductor of the electrical forces. When the body is bedewed with perspiration it prevents the rapid escape of warmth and absorbs the moisture, which linen or cotton does not do.

Sleep is necessary for the healthy development of children, and this physical comfort must be secured by attention to the proper diet, warmth, cleanliness and pure air. An infant should never be kept awake when fatigued, under the impression that it will rest better at night. Over-fatigue produces general irritability and restlessness. Children should be fed at stated intervals and should sleep at regular hours. Never lift them by one arm, or let them receive severe falls on the head, as it produces concussion of the brain and may cause death.

In the management of children there must be an easy, steady, firm treatment, accompanied by calm judgment, yet gentle and persevering government, which will at all times insure obedience. Never frighten them by shutting them in a dark room or closet. A child's mind should be impressed with truth, honesty, fidelity and benevolence. They are close observers and care should be taken that they never hear equivocations from their parents or teachers. Things that are

often considered of little importance, are sometimes treasured up by children. So be watchful, ever on the lookout for your children's welfare. Punish their faults with firmness and good judgment, but never in anger. If possible keep them from forming bad habits, and especially keep your boy from the use of tobacco, as it is the principal foundation of the evil of drunkenness.

The responsibility of a mother is great; how few feel or appreciate the fact that the soul that she has created through her own inherent power is to live forever? She must expect to be accountable for the future development of that child, both physically and mentally. How necessary it is to look to the healthy development of your daughters, who are to be the mothers of the future generation! Why is it that so many who began life with healthy bodies, are now hollow-chested, stoop shouldered, sallow and broken down, when they should be in their prime? How few have that vigor, that fullness of life, that buoyant cheertulness that makes life a luxury? Notice your little girl, fresh from her bath, cheeks that "*vie* with the rose, and eyes that sparkle like brilliants." Every step is a spring, she laughs and shouts, and the dear little face beams with smiles at a pleasant word from "mamma." Her plain breakfast of bread and milk is swallowed with unmistakable delight, "betause it was so dood." All day she runs and plays, happy as an angel, and when at night the little head nestles down on the pillow sleep comes without effort and is undisturbed by dreams. She is a joy, a sunbeam and music for the household. Is it not glorious to see such a picture of health, and thank God that He has endowed that child with such perfect health? But, alas, look forward twenty years, and our joy will be turned into sadness by the contrast. See her now a grown woman, married and in a house of her own. She

is languid and dull and full of aches and pains, requiring stimulants to brace up her nerves. She has no store of vitality to resist the wear and tear of life. We are ready to ask, Why is it? How did we lose this priceless blessing?

It is simply because only in our early years that health is made a prominent object. In early years our children are given simple food and are bathed properly. Their bodies are objects of attention. They are left to play in the air and sunshine, and grow and develop like a healthy plant. An their education begins, their bodies become a secondary consideration, and are left to take care of themselves, while the mind goes through the "cramming" process. Children sit six hours a day in school, breathing the exhalations from each other's lungs — as fresh air in a school room is out of the question—with brain and nerves strained and every movement of the muscles suppressed. Up to this time they have lived in the open air, and now ten or fifteen minutes are deemed sufficient for exercise, and too often they are sent home with books to occupy the rest of their time. This treatment is simply barbarous, and is a living death to a high spirited, intellectual child. The physical training should be of as much consideration as the mental, and every child should be instructed in regard to the laws of health. When this is done a crooked spine and a sallow complexion will be an exception, and men and women will have bodies that will honor God their maker. " The day has gone, and thank God for it, when we can attribute death from violated physical laws, *to the will of Providence.* He never *willed* that our daughters should be cut down with consumption and leave us desolate and heartbroken. He never willed the darling babe should be cut off before its first year, leaving its devoted parents to weep in sadness.'

APHTHÆ OR THRUSH.

Thrush or canker is the term applied to a disease of infants, characterized by the mouth and tongue being covered with white blisters. It often runs in families, and is a disease of debility. Its cause is often an acid reaction of the milk, and runs the whole length of the digestive track. General treatment by electricity, and perhaps a change of milk will control this disease. Hydrastus triturated with sugar of milk is of benefit.

CONSTIPATION.

Very young infants are sometimes troubled with constipation. There is probably an inactive condition of the bowels and liver. Give treatment in the rectum, the same as for adults, in connection with general treatment.

DYSENTERY (*Collitis*).

Here we have inflammation of the colon or large intestine. Treat by introducing the electrode into the rectum, with the plate attached to the negative current over the bowels. The spine must be treated in all these cases.

CHOLERA INFANTUM.

This disease will not prove fatal if the child has electrical treatment in the early stages. The diet should be changed, as the trouble is often caused by the cow's milk being overheated; use *Swiss Condensed milk* and treat with mild remedies. I have saved many children that I believe would have died if they had not been vitalized with electricity. Many children die of this disease for the reason that it is difficult to diagnose correctly. Brain complications often exist, but are overlooked because the child is too young to give the symptoms when diagnosing.

DIARRHŒA.

Diarrhœa may appear without fever. When pain is present it is termed inflammatory diarrhœa. The cause should be ascertained, and if the food is at fault it should be changed. Then give electrical treatment, paying special attention to the liver. If an action of the liver can be brought about the fresh bile will control the diarrhœa in both children and adults.

INDIGESTION,

Sour stomach, vomiting, colic. These diseases in children bear a strong similarity to the same in adults, and in both cases the cause is overfeeding, until the stomach is too weak to digest food. Mothers should be very careful of a child that is subject to colic. She should not feed it oftener than every three hours, and should be regular and methodical in all habits of herself and child. Electricity if given for six or eight treatments, one each day, will arouse the nerves to assimilate the food so that it will not sour and cause colic.

CONGESTION OF THE LUNGS IN INFANTS.

I was called in a case of congestion of the lungs of a child only nine weeks old, but past nursing. It could scarcely get its breath. I immediately applied the currents, one on the cervical nerves at the back of the neck, reaching between the shoulders, and the other over a heavy napkin covering the lungs, liver and stomach. When the current had been running about twenty minutes, it vomited nearly half a teacupful of phlegm and seemed so much easier that I told the mother to nurse it, and it fed readily. After keeping the current on forty minutes altogether, the child seemed nearly well. They bathed and dressed it. I left some homeopathic remedies, and when I called the next morning the child was well.

BRONCHITIS AND PNEUMONIA

Should be treated the same as for adults. If much soreness is present lay a large cloth between the lungs and plate, so that the current will not be painful. I have relieved cases of pneumonia in a few minutes.

FALSE CROUP OR ASTHMA.

This difficulty consists of spasms of the glottis, which impede respiration. The attacks are sudden and result from a partial or total obstruction in the windpipe against the admission of air. The child struggles for breath, the respiration is hurried and the countenance bluish or livid. This is often mistaken for membranous croup. If not relieved immediately death is certain. I have never treated this disease with electricity, but am certain if the current is applied around the throat in such a manner as to contract the epiglottis, the cure would be effectual and sure.

CROUP OR TRACHEALIS.

Croup is an inflammatory affection of the mucous membrane, in the early stage of the larnyx and subsequently of the trachea. Inflammatory or membranous croup commences with hoarseness, accompanied with a hoarse cough. In this disease electricity applied around the throat will cure in every instance, especially if used in connection with homeopathic doses of Aconite, Spongia and Hepar sulphur. Apply the positive current to the back of the neck, and the negative in front in such a way that the plates do not touch each other. It is a benefit to apply the positive current to the tongue while the negative is around the throat. Treat the neck with the negative current while the positive is lower on the spine. No case of croup need be lost with the above remedies.

WHOOPING COUGH OR PERTUSSIS.

An attack of this disease is much lighter when treated with electricity. This agent reduces the irritation and relaxes the muscles so that the cough is easier, the whooping is scarcely perceptible and the paroxysms are much farther apart. "When left to itself and uncomplicated, whooping cough runs about six weeks, in each of the successive stages of development, persistence and decline." Under electrical treatment the worst is over in three weeks.

DIPHTHERIA.

Diphtheria is an epidemic, and to some extent an infectious disease, which runs a very rapid course. The patient is speedily prostrated; a false membrane forms on the tonsils, reaching at times the length of the throat, often accompanied by an external eruption. It is sometimes complicated with diphtheretic croup. Diphtheria in its malignant form is very fatal, but need not necessarily be so, especially when we have such a remedy as electricity, with its wonderful allotropic or chemical action on all poisons that may be diffused in the blood, either from epidemic causes, or originating in the system from abnormal conditions. Electricity will reduce all the inflammatory symptoms, neutralize the diphtheretic poison, and stimulate the absorbents to carry it out of the system, and by that means escape the *sequela* that so often kills the patient when he seems to be getting better. This condition must be caused by the diphtheretic poison passing into the blood and causing paralysis of the muscles of the heart. Cases in this region seemed to prove fatal from this cause. I also take sulphur, fine charcoal and salt, mix them together and administer either by blowing into the throat or laying a small powder on the tongue. I then saturate a towel with strong salt water and wrap it around

the neck, and apply the negative current over it, putting the positive current on the spine, near the other; then give general treatment and the patient can be saved, even if given up by other methods of treatment.

DENTATION.

I treated one child all through dentation, and with such success that she suffered very little. When her gums would cause her to fret, I would take her to the battery, and she would immediately stop and begin to laugh. When the current was wrapped in a wet cloth she would hold it in her mouth, and chew it with the swollen gums. After she got through I would give her a general treatment to still futher quiet the irritation, and she would have no more trouble with that tooth, and it would be cut in a few days. In her case we controlled the colic, colds and bowel troubles.

ATROPHY OF INFANTS

Is a condition caused by the want of healthy nutrition, and is characterized by general marasmus, or wasting away of the entire system. The cause may be in the kind of food the child is supplied with, or its inability to assimilate what is eaten on account of the want of vital action in the nerves of the stomach. Here electricity acts like a charm; the first treatment arouses the nerves leading to the seat of digestion, causing the assimilation of food to be perceptibly increased. It has never failed in my hands. If it did I knew that if the food were changed the child would soon reach a normal condition. One child could not thrive on even Ridge's food, with electricity to help digestion, but the preparation acted as a poison, causing skin disease. Its food was changed to Swiss condensed milk, and all was well. Mrs. L.'s infant was seemingly dying with marasmus. It could scarcely assimilate food enough to keep

it alive. It had the best physicians but they gave no hope of its recovery. I had previously treated the mother and others of the family, and they had a battery. She wrote me about the child. I sent instructions just how to apply the electricity, and she commenced giving general treatment. The first treatment was of benefit. I also warned her against giving strong medicine while using electricity. The child improved right along and is now a healthy child nine years of age. I believe nearly every case of atrophy could be cured if it could be stimulated with homeopathic doses of electricity. Never give a child any but very light currents and *never* use tension or secondary currents on a child.

CHAPTER XIV.

CAUSE OF THE POOR HEALTH OF OUR GIRLS.

Soundness and purity of the reproductive organs are indispensable to bearing perfect and vigorous offspring. If both mothers and daughters could be induced to devote more attention to the laws of life and health, there would soon be an end to the diseases now prevalent among our young women to such a lamentable extent. There are plenty of over-kind mothers who neglect the physical training of their daughters, and when the trial of menstruation comes a moderate degree of exercise throws them out of breath. How many pale, sallow-faced girls we meet who plainly show their sufferings, and tell the world that their *physical life* consists of listless idleness and "blue pills." Not long since a lady called on me with her daughter, a pale-faced, consumptive, dyspeptic creature, who looked as though the sun had never thrown a ray on her. The mother asked, "Doctor, what ails my child? There never was a daughter reared more tenderly. She has never known exposure, never had to work, and has been an object of constant attention; yet she is so frail, and is failing in health every day." My reply was, "Madam, with all your care and anxiety there is one thing you have neglected, and that is *physical exercise.*" "Oh, no;" said she, "I assure you that has been attended to, she has had *physic* every week since she was a little girl. We have given her a wonderful sight of pills to purify her blood and strengthen her."

Alas! too many parents are trying this kind of physical exercise. It would be quite as sensible to strengthen

a child of feeble intellect by applying strengthening plasters to the brain, as to invigorate the body by physic. Let children, boys and girls, run in the open air and breathe "God's blood purifier," oxygen. Nature woes us in a thousand ways to bodily activity. Plato says, "Exercise will almost cure a guilty conscience." Who among us can afford to lose such a valuable panacea? Keeping girls a large portion of the time in close rooms without physical exercise, and at the same time allowing them to be out late at night, is wrong. Many of our young ladies are so frivolous, and their mothers so indulgent, that I think it wonderful that the victims of disease and death are not more numerous.

The careful observer on our promenades may see our girls lightly clad, exposing themselves to all kinds of weather. When heated by exercise or the warm season they will drink ice water, and eat ice cream, or sit in a cool draft. Is it any wonder that chlorosis or consumption attack so many, and that the menstrual function never assumes a regular development? Then to cap the climax, these young girls are given brandy, whiskey, and other hot drinks, in the vain hope that these stimulating beverages will restore the strength which has been wasted in fashionable folly. It were better no medicine at all were given than that usually prescribed. Iron is given, but in many cases it benefits only for a time. Physicians often know that their prescriptions will not have the desired effect, but the anxiety of parents compels them to order something. If doctors as a class, instead of prescribing that which they are convinced will be of no benefit, would inquire into the habits of these young girls, and teach them how to live, and keep well, it would be more commendable.

The best treatment for acute suppression of the menses is to do all we can to fortify the general health. One treatment of electricity will generally bring the

desired result. If it does not, three treatments will without fail. If electricity cannot be had, if the patient is cold, use friction; if hot, use a tepid bath, with a good rubbing afterwards. The retention of the menses is often attended with what is termed chlorosis or green sickness, where the skin has a dingy greenish color. This disease attacks delicate constitutions, and very nervous girls. So long as this nervousness is not over-taxed, she will enjoy tolerably good health. But when nature calls for her monthly tribute, when new thoughts and new desires take her attention, then when the change occurs, the frail balance is destroyed, the digestive absorbents and assimilating functions fail, and the marked symptoms of chlorosis make their appearance. A course of electrical treatment will soon cause this to pass by, a healthy menstrual regularity will be assumed, and the circulation so changed that in place of the dingy, green color of the skin, a healthy pink flow to the capillaries will be the result. Electricity, in connection with physical exercise and a careful diet, with a reasonable amount of good judgment, will make healthy girls and healthy mothers for the coming man.

The degeneracy of our female population is alarmingly on the increase, and is already exciting the most anxious solicitude ; and, unless some radical change is soon instituted in the habits and costumes of female life, health will bid a mournful farewell to our successors. I have made it a point to teach, as far as possible, hygienic laws of living, discouraging so much drug and patent medication but in its place plenty of fresh air, plain but wholesome food and proper physical exercise. It is our duty as physicians to teach young mothers how to bring up healthy children. When we look around us and see how parents bring children into the world and how they are fed and dressed, is it any wonder that death claims so many loved ones? One of my hobbies

has been, and it would have been carried out but for the want of the *"almighty dollar,"* to found a college for marriageable girls, with a winter term of four months, on the plan of medical schools, where enough of anatomy, physiology, hygiene, obstetrics, and diseases of children are taught to make her familiar with her own sexual development. Besides, I would teach a thorough course of electro-therapeutics, and the application to herself and children. What can we expect of girls who marry in ignorance, she to develop a *human soul* in her own organism, and to be a *creator* of human life, and not taught the first principles of her sexual wants, or of the development of her precious babe? Is it any wonder that death takes half of the children born?

DISEASES OF WOMEN.

There is perhaps no class of diseases concerning which the views of the medical profession have undergone a more complete revolution, within a comparatively short period, as that to which I am about to draw your attention. Before the year 1820, the medical profession seem to have been in the darkness of midnight respecting the true cause of delicacy among females; and very little progress appears to have been made until 1843, when Professor Simpson shocked the medical world by his bold advances in uterine pathology. Since that time many ardent minds have been called into the active consideration of this most important study. While some progress has been made there is much yet remains to be accomplished, for the reason that almost every woman is still suffering with some chronic ailment of the uterine system, notwithstanding the fact that they have been for years seeking relief from many uterine pathologists, who have used different kinds of mechanical devices and local applications of stimulating remedies.

Fifteen years of experience in treating all classes of uterine diseases, without any other stimulant or mechanical appliance than electricity, and the wonderful success attending its use, have lead me to conclude that herein lies the solid foundation for research by all interested practical uterine pathologists. Electricity as a stimulant stands pre-eminent. Its absorbing power far surpasses the caustic treatment now employed by uterine specialists.

It was by accident that I discovered a mode of application of electricity for uterine displacements, which has been of great importance to me, as hundreds of suffering women can testify. I do not claim to have discovered any new agent or element, *but do claim* the discovery of a new *method* of applying electricity, so as to effect a certain and permanent cure for all prevailing uterine diseases. Our method of application is no guess work; it is not a matter of doubt or uncertainty, but is based upon scientific principles that can be plainly demonstrated. We invite any one to prove our assertion by practically carrying out our instructions. I can say without the least hesitancy that I have cured nine out of every ten patients treated in the last fifteen years, and not only was the local difficulty cured, but the general health was built up and the attending symptoms that accompany nearly all uterine diseases, overcome. I am certain that if the physician or invalid will give general treatment as directed in Chapter X, with local as given under each disease, he will be as successful as I have been.

NYMPHOMANIA.

This formidable disease consists in an uncontrollable passion for sexual intercourse, and often amounts to an actual insanity. The cause is an inflammation of the clitoris and nymphas, from numerous causes. When

the disease has progressed for some time the general health is affected through the constant strain on the nervous system. To cure this, general treatment with the local will be necessary. For local treatment take a small sponge or fine cloth, but of a loose texture, wrap the small wire of the cord from the B or negative current, and apply direct to the clitoris. Place the A or positive current over the pubes, or on the spine, or both, and a part of the time in the vagina, attached to the vagina electrode.

ABCESS OF THE LABIA.

Abcess of the labia, or encysted tumors of these parts, are usually caused from injuries. They are rapid in forming and terminate as rapidly by suppuration, but the parts are prone to a recurrence of this trouble, which can be cured or overcome by this treatment. If the general health is good local application will be all that is required. A case in practice: Mrs.—,troubled for years with abcess of the labia; examination showed a thickening to four times their normal size. I wound a cloth around the vaginal electrode, oiled it, and passed into vagina so the labia pressed on the cloth with the negative current, placing the other current over the spine, then over the groin and pubes, treated one hour every day for two weeks. Result: labia natural thickness, ulceration gone, discharged cured and no return of the disease. Fungus growths of the vagina treated in a similar manner with like results.

PROLAPSUS OF THE VAGINA.

Prolapsus of the vagina in all its different forms, let it be anterior, posterior, or inverted, is very easily controlled, by using the vagina electrode with negative current at the sacral nerves, and the positive current in the vagina, for fifteen minutes, to contract for that length

of time; then change the negative current to the abdomen, and leave the positive in the vagina. If surgeons would try this method of contracting the vagina walls, they would never be obliged to *cut* a part of the vagina out, but would be surprised to see the indurated, thickened walls contract, and assuming the natural delicate pink color, after about from ten to twenty applications of electricity. General treatment should be used a part of the time, letting the positive current remain in the vagina throughout the whole treatment. Uterine cramps, neuralgia, strictures and inflammations of the vagina, can all be controlled if treated as above directed. Acute forms can be relieved by from one to three applications. In all the above cases, if a thin piece of cloth is wound around the electrode, the application is more certain and facilitates the cure. The cloths must be oiled with Cosmoline or Vaseline. It is more difficult to enter it with the cloth on.

STRICTURE AND INDURATIONS OF THE VAGINA.

Induration of the vagina is caused by chronic inflammation of the cellular tissues. Inflammation causes adhesion, contraction and stricture of the vagina walls. Mrs. M., aged 50, came under my care for neuralgia through the pelvis. She had been a widow since the birth of her last child. At that time she had been very sick with inflammation of the vagina, from injury of instrumental delivery. I discovered a stricture with other contractions and thickened walls about three inches above the sphincter vagina. It was with difficulty I could enter a female catheter, the opening was only sufficient for the secretions from the uterus to pass. She had no knowledge of her condition. She had passed through the climacteric period or change of life, but suffered with pains similar to labor pains. The stricture causing the suppression of the menstrual flow, weakened all the nerves

of the pelvis, causing neuralgia with every change of the weather. I relaxed the stricture by using different sized electrodes with the negative current, treating all the nerves in and around the pelvic cavity. By the time the vagina was in good condition, the neuralgia was permanently cured and her general health greatly improved. I used the positive current internally with every treatment.

CASE OF ADHESION OF THE VAGINA.

Miss W., aged 35.—She was expecting to be married in a few months. She had been troubled with leucorrhœa for years, until her general health was run down. Upon making a digital examination I found the uterus in the left groin with adhesions so strong that the uterus could not be moved upward a particle. Of course the vagina was contracted and indurated, and adhered to the pubic bone internally, and chronic inflammation of the cervix, complicated with dysmenorrhœa (painful menstruation.) I gave general treatment with the vagina electrode, wrapped with cloth wet in warm soft water. I could not get it up but about an inch, but by treating there with the positive current, all the time I was giving general treatment with the negative, the vagina having an alkali reaction, the positive an acid, that caused a still stronger chemical action, and by this mode of application the indurations were absorbed rapidly. After treating about two weeks, giving one each day, I said, "I am going to pull off those internal adhesions." I inserted the electrode as far as possible, which was nearly three inches by this time (the vagina had relaxed so much). I then took a broad plate, placing it over the abdomen, attached to the contracting or negative current. I then commenced pulling out the plunger, making steady pressure on both currents. In about five minutes the adhesions gave away with a jerk,

frightening her somewhat, but only for a moment. I expected it, as I had in many other instances had the same thing happen, sometimes when there was adhesion in the region of the liver, and in other cases where the uterus adhered to the rectum. The electrode passed up nearly the whole length of it the next morning, and the acute inflammation was controlled with the next treatment, and after a few more treatments the case was dismissed cured. She married and had one child, and with no more difficulty than most women of adult age.

VAGINAL FISTULA.

Inflammation, or the use of instruments in parturition, may cause fistulous openings through the walls of the vagina, into some of the surrounding parts. This class of diseases are difficult to heal, often creating a necessity for surgical interference. But by using electricity to the surrounding parts, and bringing about a vital action sufficient, the healing process goes on without local or surgical aid. If it does not unite by using the vagina electrode, take the ear or lachrymal duct electrode and direct a current locally to the fistula, and the induration will readily absorb, and heal, the same as in fistula in ano.

LEUCORRHŒA OR THE WHITES.

This disease consists of acute or chronic inflammation of the vagina or uterus, or both. The color varies; it sometimes is white, sometimes green, or a mixture of both geen and yellow, and sometimes assumes a catarrhal or yellowish color. The consistency may be of a creamy nature; it may be tenacious or stringy, if the cervix is involved; it may, if coming from the fundus, be of an acrid irritating nature, and may cause pruritus. This form of leucorrhœa becomes contagious, and

develops disease of similar nature in the male. Leucorrhœa is so copious at times as to render napkins indispensable as when menstruating. There will be more or less pain in the back, down the groins, and the urethra will often become implicated, causing painful micturition. This disease in all its different forms can be cured with electricity. When the vagina is the seat of the disease the local treatment is nearly the same as for vaginitus, only more treatments will be necessary. If the discharge is acrid the uterus will have to be treated locally. Refer to uterine disease. General treatment should be given in connection with local, as it will restore normal action much sooner than the local treatment alone, for the reason that general debility and gastric disturbance nearly always accompany this disease through sympathy.

MENORRHAGIA.

Profuse menstruation or hemorrhage may take place at any time of life. But the most common is that which happens during the period of menstruation from a congestion or relaxation of the uterine blood vessels. A certain amount of blood is secreted each month, and this quantity is determined by the temperament, constitution and the habits of each person. Women that are robust might lose a large quantity of blood at each period, and not suffer from it, while delicate and relaxed constitutions would experience bad effects. Women who are most subject to an immoderate flow, are those who live indolently and indulge in stimulants, who keep late hours and have very little outdoor exercise, or who are nearing the change of life. To these I may add those whose physical labors are too hard for their constitutions. A real healthy person will never have this disease except under some peculiar circumstance for a single time. The general indication for

treatment will be inferred from the character of the disease. Electricity controls any abnormal hemorrhage.

This is to certify that I was cured of uterine hemmorhage with three treatments of electricity by Dr. S. E. Morrill.

Mrs. Aragaman (German),
808 Seventh Street, N. W. Washington, D. C.

This is to certify that I was cured of uterine hemorrhage of two years' standing; now two years and no return; administered by Dr. S. E. Morrill, M. D.

Mrs. Moses Brown, Massillion, O.

Dysmenorrhœa or Painful Menstruation.

This disease is most common in young girls; some have pains similar to labor pains, others pain in the groins, running down the limbs. This is caused by a rigid and contracted condition of the mouth of the uterus. Many girls are relieved of this after marriage and having a child. Electricity will cure this, if the treatment is given in the cervix, by using the positive current and relaxing and softening up the neck. The only difficulty is the impracticability of using the speculum. I have often cured such cases by treating through to the uterus with the vagina electrode. That replaces the uterus if there is displacement, which often causes dysmenorrhœa alone, beside the vital current running through will relax the os uteri. A Miss C., aged 26, had suffered terribly every month for years. I gave her six or eight treatments. She would not permit an examination. At time for menses she was as sick as ever. They sent for me; I used the electricity and relieved the pain immediately. I told her she must submit to an examination, that I could not and would not work in the dark. After a few days she consented. I made only a digital examination. I discovered retroversion. I then treated by applying the electrode back and under, and the next menses came without pain.

UTERUS.

The unimpregnated uterus in its normal state is situated in the lower part of the hypogastrium, and is inaccessible to the touch externally, or to percussion, but when normally developed by impregnation, or abnormally diseased, palpation, percussion or electrical diagnosing furnish us with important information. Any dullness found when precussing in the region of the pelvic cavity would lead us to suspect a tumor or other morbid growths. Tumors of the uterus, whether developed on its surface, in its walls, or within its cavity, will cause it to occupy the same situation as a gravid uterus. If pregnancy is suspected a light current will cause a strong motion, and if no motion is produced then it is propably an abnormal growth, and other mechanical means must be resorted to for diagnosing. Sometime fecal accumulations in the large intestines, enlargement of the spleen, liver or kidneys, have been mistaken for tumors.

It is important that the electrical operator should be well posted in anatomy and the nervous system, before taking this powerful remedy and asking the confidence of the public. An electrician must be an expert in diagnosing, if he wishes to excel in controlling disease, especially if he expects to cure uterine diseases. There are many disorders of both the external and internal genitals, such as nymphomania, inflammations, parasites and tumors, all amenable to electrical treatment, and we have taken them up separately in order to give the instructions necessary for their local stimulation with this wonderful remedy, which soon will be the *lever power* of *the medical and surgical schools.*

DISPLACEMENTS OF THE UTERUS.

Prolapsus uteri, or falling of the womb, may truly be said, to be the canker worm sapping the very foundation of health and vitality. The uterus being the grand nu-

cleus of womanhood, and sympathizing with the brain, through its spinal and sympathetic nervous system, of course when displaced it must necessarily produce those sufferings known only to a woman with this trouble. This disease in its different forms, being the result of weakness and relaxation of the ligaments and muscles holding the uterus in place, no permanent relief can be experienced until the vital energy is restored, and muscular contraction is fully established. The contraction of muscles and ligaments can be cured by the mechanical action of electricity. More can be done in its acute stage in five minutes, than can be done by medicine in a month. I have cured acute simple prolapsus with one application And retroversion, anteversion, procidentia, with all their complications, *never fail* to be permanently cured with from ten to fifty treatments. Build up the general health, at the same time give local stimulation as the case needs.

UTERINE DISPLACEMENT.

This is to certify I have had prelapsus of the uterus for five years, so bad that I could hardly be on my feet, and when I was it was with much pain and distress. During said time I used all I could hear of as being good; called in a number of physicians. They could prescribe astringents, such as sugar of lead and tannin, &c., pessaries and abdominal supporters. They did me no good to the curing of the complaint. I was miserable. I thought I was too young a woman, thirty years, with three children, to drag out such a life. I would give anything to be well again. To be drugged and belted up all my life was too horrible to think of. One of my lady friends came in while I was feeling so bad, and told me about the great cures that Dr. Morrill was making with electricity. As soon as my husband came in I requested him to go and bring the doctor, which he did. The doctor examined my case, and said, "I can cure you in twenty-five treatments, one a day." I am well, and thank God that I use no pessaries, no supporters of any kind; and further I would gladly recommend the doctor to all women so afflicted. ELIZABETH SNIDER.

Prolapsus, or simple falling of the womb, is by far the most frequent form of displacements. The symptoms are dragging pains in the small of the back; pulling and bearing down sensation in the lower part of the abdomen, worse after active exercise, frequent call to make water, for the reason the uterus in its descent drags the bladder with it. The peritoneum forms the great suspensory ligament, one of the functions of this membrane being to sustain all the pelvic organs. The peritoneum is the true uterine supporter, the other ligaments tending rather to steady the uterus. This membrane is reflected from the bladder upon the womb in such a manner as to sustain it in front from its anterior surface. And it is so reflected from the uterus upon the rectum posteriorly, as to sustain it in that direction. And thus it is evident that the prolapsed uterus depends upon the relaxation of the peritoneum for its descent into the pelvis. In anteversion the fundus falls forward toward the bladder. Anteversion implies a slight falling of the fundus, or the organ bent upon itself. We sometimes find anteversion with flexion. The symptoms nearly resemble prolapsus uteri and can only be determined by exploration. Retroversion is the most difficult of all, but no less important to determine and cure. By a digital examination the fundus will be found turned back in the sacrum, the os uteri or mouth of the womb pointing upward towards the bladder, or near the mouth of the vagina. One of the principal symptoms is the pressure on rectum, causing constipation and difficult micturation, etc.

The local treatment of all displacements consists in making the application so as to bring all muscles, ligaments and the peritoneum under the direct action of electricity. We as physicians are aware that all the mechanical appliances now in vogue are of but little use for permanent benefit or replacing the uterus. Many

physicians *pretend* to replace it with the uterine elevator or by digital manipulations. Relief is often felt after the uterus is moved off from inflamed nerves or muscles, but we know that changing the position does not cause contraction of the peritoneum or muscles that have been relaxed for years; but bring these relaxed muscles and ligaments under the proper influence of the electrical current, and normal action is permanently gained. The vagina is always more or less relaxed, and by introducing the positive current into the vagina, with the vaginal electrode attached, we stimulate and tone its walls so that it can hold up the uterus. The ligaments are strengthened by the external application of the negative current, if it is applied with broad plates large enough to cover the abdomen, bringing it low down in the groin, the current will be felt to the feet, the bowels will pull with a steady contraction not unpleasant. If retroversion is found the electrode should be directed back under the uterus. It will take a number of treatments to gain any perceptible movement upwards, but many attending disagreeable symptoms will be immediately removed

One of the worst symptoms in the case of Mrs. G., of Chicago, was a head difficulty. She would lose consciousness at times. I diagnosed retroversion with a congested uterus and hypertrophied cervix. She felt some symptoms of congestion in her head while on the train coming to visit me, but she has been free from it since my first treatment six years ago. I lifted the uterus off from those sacral nerves that caused the reflex head symptoms. I directed the electrode under the retroverted uterus, raising it just enough to relieve the nerves, and treating over the bowels caused contraction enough to hold the uterus up until the next treatment, and each succeeding one strengthened her still more, and

at the same time reduced the enlargement of the uterus. After three weeks she went back a new woman, and has continued well ever since. She learned to use electricity and bought a battery, and has used it whenever she has felt the need of it, and by that means has kept well.

Some thirteen years ago this same Mrs. G. was treated by me in Dayton, Ohio, for anteversion. It was the first case of adhesion of the uterus to the vagina I had treated, and I discovered that by accident. We were treating with the electrode in the vagina, and negative current over the bowels. I was giving firm pressure and pulling the ligaments and bowels as much as she could bear. Off came the adhesion with a jerk unexpected to her. "Well," said I, "the uterus is in place," and such proved to be the fact. She had no more difficulty for five years, when the same thing occurred again as above stated, and she found nothing to help her till she found relief in the treatment I gave her.

ACUTE AND CHRONIC INFLAMMATION OF THE UTERUS.

We have two forms of inflammation of the womb: The first, sub-acute form, or inflammation of the mucous surfaces, similar to the catarrhal inflammation of the vagina. The second variety is inflammation of the deep tissues, and is called metritis. This condition may be acute and run into a low grade or chronic form. In either form the cervix is the seat of the disease, and if not controlled the tendency is to involve the deep tissues and then ulceration is the result.

Endometritis or metritis is seldom seen before puberty, never except when caused by mechanical injury or by external inflammation of the external genitals. I was called to see a child fourteen months old who had been troubled some time with excoriation or chaffing in the groin. It had extended through the vagina and the

symptoms led me to diagnose metritis. The discharge had all the symptoms of leucorrhœa in older persons. I used a female catheter to the positive current, the negative current over the bowels and around the vulva. The child went to sleep during the operation. The discharge was more profuse for twelve hours after the treatment. I gave three, one each day. Both the internal and external disease was cured. I gave some homeopathic remedies besides. Metritis or inflammation of the deep tissues and substance of the womb, is rarely met with. The first symptoms are rigors followed by feverishness; heat in the pelvic region; deep-seated pain in the vagina; paroxysms of pain in the back, which dart through the hips, and extend down the groins and thighs. The pain is aggravated by coughing or sneezing. In the chronic form a slight misstep is painful, and the hypogastric region is tender to the touch. There is often a disposition to faint on sitting up, and I have seen hysterical mania from this course. This condition leads to hypertrophy, indurations, and ulcerations.

Electricity *will cure* all this class of diseases, both acute and chronic. My mode of treatment in these cases is to give general treatment all over the system, with the negative current attached to a plate, and the positive current attached to the vagina electrode, and introduced in such a way that the uterus is affected through the whole treatment of an hour for three successive days; the evening of the third day give a mild physic, and on the fourth day a vapor or electrical bath. This method changes the circulation, driving the surplus blood from the uterus. When the vagina electrode is used it affects the nerves of the spine, so that the current is felt to the end of the toes, warming up the feet, changing the course of the blood to the extremities. Cold feet are always one of the symptoms of metritis.

The fifth treatment is similar to the three first except I use a speculum when nearly through the general treatment, and give local treatment through the cervix with plate over the bowels, using the same current as before. I use the entra uterine electrode through the speculum, about fifteen minutes. If any head difficulty is present treat (after the local at the uterus) with negative current at the base of the brain, near the medular oblongata, around the ears, over and through the eyes with very light current. A good current will be borne on the back part of the head. The hair must be wet before commencing the head treatment. Care must be taken about exposure to the air, if the patient is delicate. I have had patients take cold by going out after the back part of the head was wet.

PROCIDENTIA OF THE UTERUS.

In these cases the vagina is completely prolapsed, the uterus can be seen externally. It is safe to conclude that young women can be permanently cured of procedentia, and old women can be benefited, and probably cured if they would take sufficient treatments, though I have not been able to hold them long enough to be certain of this. In these cases the peritoneum is relaxed, the vagina thickened and indurated to such an extent that it has lost its tone, and as sexual stimulation has passed it is a difficult matter to bring back a normal condition with even the powerful action of electricity. Miss S., 20 years of age, was treated for procedentia of two years standing. The complications were only simple vaginal inflammation, and seven treatments cured her, and she washed every day while taking it, that being her only way of making a livelihood. I saw her three months after and she had no return of the difficulty.

ULCERATIONS OF THE UTERUS.

"Ulcerations of the uterus may be divided into four distinct classes: Erosion, simple ulcers, malignant or corroding ulcers and cancerous ulcers." The first are simple abrasions of the cervix, involving the mucous coats alone. The appearance is a vivid red color, and sometimes minute granulations with congestion of the cervix. If there is only this local manifestation with slight displacement, and no important constitutional symptoms, from six to eight general treatments, with local stimulation, as described for metritis, is all that will be necessary to cure the case.

Deep seated ulceration sometimes destroys a considerable portion of the cervix, and the ulceration often extends all through the canal to the fundus. The mouth will have a patulous appearance. When the disease, let it be ulceration or inflammation, reaches the canal of the cervix or fundus, the discharge is albuminous; it will pass away in quantities at a time looking like the white of an egg. The treatment of the *ancient* school consists of vaginal injections, mercurials, and what they term tonics. This course is the one that has been pursued for centuries, unmindful of the anatomical relations of the cervical canal and the vagina, and the impossibility of reaching the disease. It has always proved inefficient and always will. To cure these cases give general treatment and local with the entra uterine electrode attached to the positive current.

MALIGNANT OR PHAGEDENIC CORRODING ULCERS.

This non-cancerous ulceration is found after middle life. These ulcers no doubt originate in a long continued inflammation of the cervix, extending upwards, assuming a malignant form, as the blood becomes more and more poisoned from absorbed acrid secretions. The ulcers spread from the cervix to the fundus and often de-

stroy the cervix. The complication sometimes extends to the rectum and other surrounding parts. There is a fetid discharge, which varies from a slight straw color to dark brown, and the hemorrhage is often alarming.

Mrs. U., aged 60, had been suffering with all the above symptoms for years, gradually growing worse. She had tried all schools of medicine, and patent remedies "by the cart load," she said. I found the cervix nearly obliterated. The uterus was as thin as the crop of a fowl. The rectum had become ulcerated, the vagina was inflamed its whole length, was a dark red color, with burning, stinging pains. By the eighth treatment I had controlled the hemorrhage and the pains in the vagina were relieved. She was an English woman, and of robust constitution, or I could not have cured her. I treated with the entra uterine electrode for a while every other day, and every other in the rectum, sometimes with two electrodes at one time, one in the rectum, the other in the vagina. It took fifty treatments to conquer this case.

MORBID GROWTHS OR FUNGI.

Fungus growths are not very common. They attack the mucous surfaces. They exist in consequence of want of vital action of the diseased membrane.

Mrs. C., aged 45, commenced treatment for difficult micturition. I immediately made the discovery of fungus growths almost filling the mouth of the urethra. The vagina was studded with them from the size of a pin point to the size of a bean, the largest one being in the urethra. I gave most of the treatment locally, using a small electrode covered with thin cloth in the urethra, with the vagina electrode in the vagina, bringing my currents close together. She of course could stand the current only a short time in the urethra. I would then, while treating the vagina, use the negative

current at the spine, over the bowels, and around the hips. Twelve treatments absorbed all the fungus growths, and relieved all the painful smyptoms.

ASCARIDES OF THE VULVA.

The parasites which cause this disease are of two kinds, ascarides and lice. The former may escape from the rectum and cause intense itching. By giving electrical treatment it arouses such vital action that the parasites leave for parts unknown.

MOLES AND HYDATIDES.

There are three kinds of moles: false moles occurring in unimpregnated females; the true moles are due to impregnation, the fleshy moles the result of a greater development of the impregnated ova. Hydatides or visceral moles are considered degenerated ovams. These hydatides can be discharged from the uterus without danger of hemorrhage by vitalizing it with electricity.

Mrs. S., aged thirty-five, was under electrical treatment for tumor, as the diagnosing led to that conclusion. When she had taken about eight treatments she commenced to have pains similar to labor pains. I came to the conclusion that whatever was in the uterus would be discharged. I continued the treatment until the tenth, and that night the whole mass came, and with very little pain or hemorrhage. The uterus contracted nicely and she was up in a few days, well. The mass would have weighed fully eight pounds.

CUTANEOUS DISEASES OF THE EXTERNAL GENITALS.

Many forms of distressing skin diseases develop on the external genitals in both sexes. An irritation causing severe itching is called pruritus. I have cured many cases of long standing, but not until the cause was removed. In women many times the cause is from an

acrid discharge from the uterus. By treating with entra uterine electrode the cause would be cured. If from the rectum that should have local treatment.

FIBROUS TUMORS.

Fibrous tumors of the uterus may be absorbed by a systematic, prolonged and persistent use of electricity. The constitutional symptoms arising from a tumor can all be controlled, and a normal standard of health maintained, the tumor being slowly absorbed, by treating every day for a month, and then three times a week. The tumor is discussed by stimulating the absorbents throughout the system and by changing the circulation, diverting the blood from the tumor. Uterine fibroids are progressing oftentimes for years before discovered.

Fibrous tumors have and can be absorbed by electrolysis; but better results are permanently gained by simple external electrization. By this means the effete matter is thrown off as fast as decomposed by the allotropic changes made. When the tumor is discussed by electrolysis the system cannot get rid it, and a metastasis to some other more vital organ may be the result. I treated Miss G., of Cincinnati, aged 40, some 12 years ago, for fibroid tumor of the uterus. She was very much debilitated. The tumor we judged weighed from 10 to 15 pounds. I commenced to build her general health immediately. In a month her health had materially improved and tumor reduced, so much that it could not be noticed externally as before she was treated. One unpleasant symptom attending the treatment was a congestion to the head. I did not then understand why, but since that time I have discovered that every part of the system must be fortified against a metastasis of the disease. We neglected to treat the head because she had no head symptoms. Miss G. is still enjoying good health and how much of the tumor still remains I do not

know. She keeps up the electrical treatment whenever she is out of health and that causes absorption of the tumor more or less.

I will here give extracts from a letter of a woman who treated herself under my instructions for fibroid tumor. "Dear doctor, I am doing nicely; when I began using the battery I measured 28 inches around the waist, now I am 24; around the abdomen I was 52 inches, now am 39; I am two inches longer waisted, and not four months treating. I feel quite encouraged and recommend the battery and Dr. Morrill for everything. I cannot thank you enough for the relief you have given me.—Mrs. O., Akron, Ohio: Nov. 15, 1871." I called on this lady a year afterward and found she had walked a mile and a half to visit friends. The neighbors said she was very much better. This is all I know of her.

Mrs C., aged 45: At the time I commenced treating this case she had been menstruating through the right breast for over a year. The mamma with nipple was contracted and indurated, with symptoms of incipient cancer. I discovered when percussing in region of the uterus a dull sound as if she might have a tumor. Upon examining per vagina the condition of neck and cervix was that of a pregnant woman. By reaching as high as I could I discovered a tumor laying across the whole pelvic cavity, resting on the basin or pelvis in such manner as not to interfere with the bladder or rectum. But the uterus was so filled by the tumor the menses could not pass—the reason of the vicarious menses to the mammæ. She did not know of the tumor, although symptoms were such I should have supposed her physician would at least have tried to investigate. I reduced the induration and softened up the breast and changed the course of the menses to throw off in "hot flashes," as the climactive or change of life was still troubling her. She regained her health. But how rapidly the tumor ab-

sorbs I am unable to say. It is evident that it has not increased or she would not have continued in good health seven years.

I absorbed an indurated tumor on the lower eyelid of a young man, some 12 years ago. It had been pronounced cancer by one of the best surgeons of Cincinnati, and it might have developed into one in time, but I do not think it was one. It took 18 local treatments. I would take the negative current and attach it to small electrode and treat direct on the tumor; it caused it to suppurate and at each treatment it discharged. It was absorbed without leaving any cicatrix, leaving no such deformity as there would have been had the knife been used.

OVARIAN TUMORS.

The larger number of tumors arising from the ovaries are dropsical, and incysted and held by a pedicle; having their origin either from the ovary or fallopian tubes, sometimes by single cysts, at others multilocular. Electricity will absorb ovarian tumors in much less time than fibroid, for the simple reason that so much of the tumor is fluid.

By giving general treatment and stimulating the skin, liver, kidneys and general system, they help their neighbor to get rid of the burden, and by diverting the blood away we stop the growth, and gradually the tumor is absorbed. We treat the same as for fibroid tumors, but they are discussed much sooner.

The ovaries are subject to other diseases, as irritations, congestions and indurations. The ovaries are less exposed to external injuries. They hold an important relation to the sexual system, and many serious symptoms remote from the ovaries are caused by their diseases through sympathy. The cause is many times never thought of by the general practitioner, but had he elec-

tricity to diagnose with, he could be much more certain in his prognosis, providing he knew how to use electricity.

DROPSY OF THE UTERUS—PHYSOMETRA.

Dropsical accumulations in the uterus may consist of mucous or serous fluids, caused by some obstruction of the canal, stopping its natural secretions, giving rise to water or gas. These conditions may be recognized by the enlargement of the uterus. Test by ballottement; if uterus is lighter than when pregnancy is present then water or gas must be diagnosed. When gas is the cause of the enlargement it will be very light. It will be safe even if pregnancy is suspected to give electrical treatment per vagum and entra uterus also. If physometra is the disease, discharges will very soon be noticed in puffs if gas, if water a constant oozing or occasional gushing of fluids. If a catherter can be introduced after a few treatments, the discharge of both water and gas will pass away. Then continue a few more treatments to contract and vitalize the uterus, and health will be restored.

VULVITAS OR INFLAMMATION OF THE EXTERNAL GENITALS.

Acute inflammation of the genitals, from whatever cause, runs a very rapid course. This condition can be controlled with one or two local treatments of electricity. If inflammation is diffused through the external parts sit in salt water with the negative current in the water, and the feet in a bucket of water with the positive current in that. When the superficial inflammation is reduced treat as for vaginitis.

POLYPUS.

These cysts ought to be removed by electro-cautery or by ligature, then local stimulation with electricity to vitalize the parts, so that others will not form. I have absorbed the blood in large polypi, and thought they were cured, but the cyst or sack will fill again.

AMPUTATION OF THE CERVIX.

This is a useless surgical operation, because electricity will reduce the most stubborn case of indurated, hypertrophied or ulcerated cervix. If malignant the amputation does not cure the disease and it will return. I have reduced an elongated cervix or *os* when it would measure an inch over the normal length and indurated to that extent it seemed, from the sound, like striking a bone. The lady was so debilitated that she had to be carried to the treating chair. She was cured in three months so that she was able to do her housework, and was all right.

LIPOMA OR FATTY TUMORS.

Electrical treatment of all kinds has failed in my hands to cure fatty tumors, but electrolysis will cure by using both currents through the tumor.

ERECTILE TUMORS.

This class of tumors can be reduced by electrolysis. But general faradization should be used in connection, to overcome any difficulty that might arise from a matastasis of the disease.

CHAPTER XV.

SPERMATOCELE AND HYDROCELE.

Notwithstanding Sir A. Cooper and other authors' "hopeless relief," we can vouch for a certainty that both the above diseases *can and have been* permanently cured with electricity. Both currents must be run through from side to side with small concentrated current through the scrotum, as near varicose veins as possible, moving the negative current upward to contract walls of the vein. For hydrocele, a good treatment, and used with less labor, is to sit on the positive and wrap the sexual organs up in a napkin wet in hot salt water, and apply a small plate attached to the negative current; or use the positive in the rectum to arouse the prostate or any other gland in that region, and the negative current as above.

SPERMATORRHŒA.

"In no instance is the curative power of electricity more strikingly illustrated than in this peculiar complaint; not only is the cause speedily eradicated, but through the manipulations of the scientific electrician the chain of connection is re-established between mind and body, thus removing the last vestige of this horrid malady.

"A description of this disease and its symptoms seems necessary, as it stamps itself in unmistakable characters upon the faces of its victims, in a melancholy, careworn expression, and sometimes in pimples and sores. Its contaminating influence insinuates itself throughout

the whole system, closing up all the mental and physical avenues, and shutting out all hopes of future happiness. It lays the foundation of nearly every form of disease, and is one of the leading causes of consumption, impotence, insanity, and even self-destruction. This disease is very imperfectly understood. The external manifestations or symptoms are nervous debility, relaxation and great exhaustion, marasmus or wasting and consumption of the tissues of the whole body, shortness of breath or too hurried breathing on ascending a hill or flight of stairs, palpitation of the heart, asthma, bronchitis, and a dry sore throat, trembling and shaking of the arms and lower limbs, aversion to society, business and study; sometimes dimness of the eyesight, loss of memory, dizziness of the head, neuralgia, pains in various parts of the body, dyspepsia, constipation of the bowels. For diseases of this kind electricity is a sovereign remedy. Owing to the versatility of its nature, these difficulties can be reached and effectually removed. By a proper change of polarity, irritation is reduced, relaxed glands and muscles contracted, the nerves invigorated, and the disordered and debilitated functions restored again to their normal action. The depression of spirit and dark forebodings experienced by the sufferers are instantly dispelled, and mind and body brought once more into harmonious action. Even where the electrical polarity of the brain has become so deranged as to cause partial insanity or idiocy, we have succeeded in arresting the troubles and restoring the sufferer to the enjoyment of permanent health."

Give general treatment with local.

IMPOTENCY.

The symptoms attending this are so nearly allied to spermatorrhœa that it will not be necessary to go into details here, but give the treatment that covers both

diseases. The local treatment must be similar to that given for stricture, phymosis, etc. It will be necessary to treat through the urethra as in stricture, and the rectum as for *prostatitis*. The mucous surface must be aroused, and it will take from ten to twenty-five treatments to cure impotency, perhaps fifty, but it is certain to do so if persevered in. It is of the utmost importance that sexual intercourse is abstained from while treating, as disastrous results sometimes follow. Case of Mr. S., aged 50, impotent from excesses. He was advised to be abstemious, especially while under treatment; he defied the instruction, and died in the act of coition, and not under circumstances very creditable. His improvement had been rapid, and had he attended strictly the treatments and followed the instructions given, he would have regained his health. *About* twenty-five treatments, general and local, are necessary to effect a permanent cure.

SATYRIASIS.

This is unquestionably a sexual insanity. It is a morbid amative passion, nearly allied to nymphomania in the female, and from similar causes. There is a chronic inflammation of the sexual organs, causing abnormal appetites. This inflammation can be reduced with less difficulty than chronic inflammation of the stomach, because more accessible to the local application of electricity. The disease is more common than is generally known, except to the wives of men who are afflicted with the complaint; they have actual knowledge of it. Many a poor woman has been murdered and is now in her grave. These facts are known to many physicians, but they know of no remedy to cure satyriasis. There is one in electricity, if it be applied as for other sexual diseases.

DISEASES OF THE PROSTATE GLAND.

These yield readily to the treatment of electricity. In this, as in other local diseases, the general health must be built as well as the local trouble attended to. I use in this the same electrode as in piles, with the A current. If convenient treat through the urethra, and then the B current will pass directly through the gland; or wrap the penis and scrotum in a cloth and lay a small plate over; this will answer almost as well. It will require from five to twenty treatments, according to length of time the disease has been developing. Inflammation of the prostate, hydrocele, spermatorrhœa and *impotency* can be cured this way. The last is a disease met with frequently, and this treatment will *cure* it.

PHYMOSIS AND PARAPHIMOSIS.

Phymosis is a contraction of the edge of the prepuce in front of the orifice of the urethra. This can be relaxed by treating the constriction with the positive current to relax, with the negative to the coccyx. If much indurated the negative must be used on the induration to absorb that before it can be relaxed. Paraphimosis is the reverse of the former, the prepuce becoming retracted behind the corona glandis, leaving the gland uncovered. The treatment will be the same as for phymosis.

HERNIA.

There are several varieties of inguinal hernia, viz.: the oblique, direct, congenital and incysted. Of these the oblique is the most frequently met with. It follows the course of the spermatic cord, and commences at the internal abdominal ring and passes into the inguinal canal. These different varieties have their exit into the internal abdominal ring, and that is the place to fortify

with electricity. By giving treatment with the negative current over the ring and surrounding muscles until an inflammatory condition of the muscles is gotten up, and contraction and firmness of the relaxed muscles is caused, the cure is effected, and can be accomplished in nine cases out of ten. I cured a man 75 years of age, who had been troubled for 20 years; he had worn a supporter all this time. The muscles contracted until they felt uncomfortable, but one treatment of the positive current relaxed sufficient to bring all iuto a normal condition. I mention this case to show that if electricity will cure a man over 70, it can cure younger men if treated with the right currents.

GONORRHŒA.

This disease is characterized by a specific morbid secretion from the urethra in males, and from the vagina in females. Gonorrhœa can be controlled by a few local treatments. The electric action will cause such chemical changes as will neutralize the specific poisons. For local treatment take a small earthen mug, fill it with warm salt water, put into this mug the penis and the negative current, the positive current at or near the scrotum or spine, always using the *a b* currents to change blood poisons. If a mug is not convenient wrap the organ up in cloth with the negative current, adapting the strength of current as the patient can bear it pleasantly.

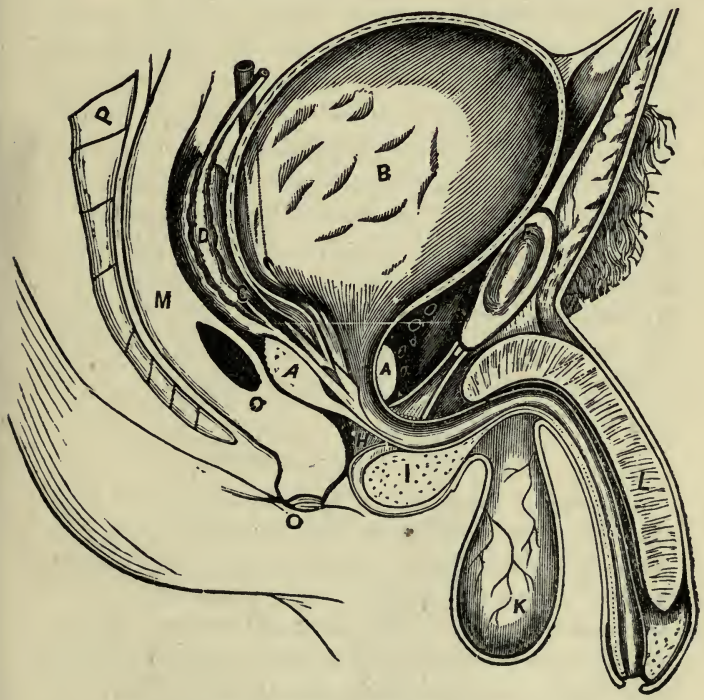
GLEET.

Gleet is a chronic form of gonorrhœa. The discharge is pale green, or colorless. This condition sometimes continues for years, and is aggravated until a permanent stricture is formed, or thickening of the bladder, or disease of the prostates is established. To cure this disease the treatment must be similar to that for stricture and

prostate glands, and the mode of treatment will be found under those diseases. The cure is certain, if electricity is applied according to directions.

BUBO.

Bubo being only an enlarged lymphatic gland from sympathy, it will readily yield to electrical stimulation applied locally to the bubo. In swelling of inguinal or other glands that appear through sympathy from injuries or disease, discuss them if possible before ulceration is in process. If suppuration is inevitable treat as described for ulcers.



I, is the prostrate gland, the current in the urethra, and M, the rectum, will reach it direct.

CHAPTER XVI.

BLOOD POISONS.

We claim that all poisons can be eliminated from the blood by a thorough course of electrical treatment. We believe the time is near at hand when cancer, scrofula, and all latent hereditary diseases will be aroused and thrown from the system, in the same manner that I relieve the system of malaria and other effete matters. While the nervous system is strong enough to repel and defend itself against the invasion of mineral and other blood poisons, the circulation will be normal; but when the vital forces from any cause are weakened, the blood becomes impure, and the liver and other excretory organs are soon clogged up and unable to throw off the heavy burden. Nature revolts in different ways, sometimes by rheumatism, bilious attacks, etc. The system asks for help, but receives a stone, in the form of strong medication, that still further depletes the nervous system.

HEREDITARY DISEASES.

Hanneman says: "Hereditary diseases arise from a peculiar psora of the blood, latent, which sooner or later develop under certain conditions and influences of natural causes, and multiply the innumerable multitude of chronic diseases. This psora will remain latent for years and then develop, either from infection or inheritance, and there is no limitation to this action." The frequent metastasis of disease from the surface to the

mucous membranes and internal organs, where sudden death follows, is a fact well known. A great many diseases are due to a miasma latent in the system, which, when circumstances favor it, becomes aroused, and ultimates in consumption, asthma, etc. This psora when thrown towards the skin develops boils, carbuncles, cancer, and tetter in teething children; if it is suddenly inverted death will follow.

When people have reason to infer that they have inherited blood poison of any kind, and come under electrical treatment or any other that might arouse these latent poisons, they ought to continue the treatmeut until it is eradicated from the system, for fear of giving to *their* children that which they have inherited. I am positive it can be accomplished. I remember treating a lady who inherited consumption. She was treating for uterine and malarial troubles, complicated with chronic catarrh—three kinds of blood poison. The treatment was continued three weeks and she was very much benefited in regard to the lung and uterine difficulties, but some of the blood poisons were still in the system, active, *not latent*, the system all this time trying to purify itself. After a few months she became pregnant. The child seemed healthy until the period of teething, when it developed tetter or teeth rash. The child sickened and died. The question arises: Did that child take from the mother the active poisons any sooner than it would if they had been latent? I think it did, but here is a chance for investigation and experiment. The mother seemed to still continue to regain her health. She now has another child, and the question is: Was her blood pure, and will this child be as free from psora as her older children seem to be, or will this child be entirely free, and will the older ones have latent psora in their systems to develop when older?

CANCER.

Carcinoma or scirrhus is malignant in its character, and in its suppurative stage is designated cancer. A scirrhus tumor is known by its uneven and hard surface. The peculiarities are its heaviness in proportion to its size, its leaden hue, and contraction of the skin that covers it. The pain attending cancer is lancinating, shooting and sharp; similar to that of neuralgia but more stinging. The lymphatic glands situated near the tumor are generally involved through sympathy. A painful indurated swelling shows what is coming and is considered a dangerous symptom.

This disease may be treated with moderate success, and electricians throughout the country claim in treating this disease a great number of cures. They do often discuss cancerous tumors by electrolysis, but my impression is, that it is done at the expense of some other organs. When tumors or cancers are discussed by any local treatment, there is almost a certainty of a metastasis of the disease, and death follows. To permanently cure this disease or any other local difficulty we must, as fast as these chemical changes are made, give our treatment in such manner as to carry it out of the system. It depends wholly upon the constitutional condition of the patient. Many cases that were claimed to have been cured were not true carcinoma; indurated glands that are not malignant are very soon softened and absorbed with electricity.

Electrolysis will discuss tumors of all kinds, but to be permanent the cancer cells must be changed by the allotropic powers of the nervous system under the influence of electric action, and this chemical change of cancer cell, with the proper treatment of the constitutional condition, may in time be so perfected as to give us a positive hope, that electricity, galvanism and electrolysis combined, will completely eradicate the cancer cell

and other malignant diseases from the blood. Electro-magnetism alone will not remove a true scirrhus tumor; it may, if persevered in, remove the cancer cell from the blood, after the tumor has been removed by electrolysis or the knife. The general health must be built up by a thorough course of treatment, arousing all the vital forces, before the tumor is operated upon, and afterward another course of treatment taken to change all cancer cells that may be still floating in the blood, and to tone the system still further. We might in this way make a permanent cure, but never with any local treatment can true carcinoma be cured. History of different cases teaches this.

Mrs B. was treated by the writer for scirrhus of the mamma gland. It was larger than a hen's egg, had been growing about a year. She inherited cancer from both father and mother. She had all the distressing symptoms, general debility, impaired digestion, distressing bronchial cough, hypertrophied liver. I did not expect to discuss the tumor, but gave general treatment, to tone and strengthen the system, preparatory to the removal of the tumor by the knife. The cough was nearly controlled, her digestion was improved and the whole system benefited. She recovered from the operation and remained comfortable for some time after. I was anxious to treat her, as soon as she came home, for fear of a return of the difficulty, but the wise surgeon frightened her in regard to the use of electricity, by telling her if she had cancer electricity would make it develop faster. Such ignorance! (It showed all he knew about it was for local treatment.) Of course if only a certain part of the system is treated and vitalized, the impurities will all be attracted to that part, and nature will try to rid herself of such by suppuration.

After she had been home a while, she complained of rheumatism all over her body. I tried, through

her husband, to have her take electro-vapor baths, if nothing else but no, her physician considered it his duty to ignore electricity in any form. He probably was not aware that those rheumatic pains were caused by floating cancer cells, affecting the nerves and muscles. I firmly believe that I could have cured her by causing a chemical change and using the electric influence in connection with baths, and she might to-day have been with her family. Understanding her constitution as I did, I would have given general treatment with electro-galvanism and electro-vapor baths, treating her as for any other blood poison. I believe the cancer cells would have undergone such a chemical change that they could have as well been discharged from the system as any other poison. Her death-warrant had been signed by her physician. He knew death would claim her for his own. Why are people so bigoted as to ignore this God-given adjunct, and not study it and determine what it might do? This doctor might have allowed her one chance of life? After the rheumatic pains disappeared she had a number of small scirrhus tumors form around the same breast, but the disease inverted, and she died of consumption.

ERYSIPELAS.

This disease is characterized by a shining red inflammation, accompanied with more or less swelling, and distressing irritation, with a stinging, smarting, burning and itching sensation. The irritation is sometimes so great as to almost set the patient crazy. It causes a peculiar nervous sensation, which is impossible to define and cannot be forgotten, as the author can vouch for; but I am happy to say that electrical treatment did and will eradicate erysipelas blood entirely from the system. The disease is often only superficial, affecting merely the skin; but when the more dangerous phlegmonous

erysipelas attacks certain parts of the body it is a dangerous disease. It is ushered in by chill and fever. The eruption forms into small blisters, containing a yellowish fluid, and the burning and itching will at times be intense. Electricity, if applied to these vesicles when the itching is at its height, will immediately relieve them, and is a certain cure.

I treated Mrs. C. for phlegmonous erysipelas in the face and head. She was six months pregnant. The disease commenced with a chill lasting five hours. The fever was light, because controlled by electrical treatment. The principal cause was constipation. I gave general treatment, found the liver congested, and bowels impacted with hard fæces. The local treatment to the bowels and liver was very thorough, following this with a cathartic and such homeopathic remedies as were indicated at the time. It took five days to get the bowels to act. The discharges were very copious and black as tar. Physic and enemas were needed, beside the electrical treatment, to control the disease and save her life. The second chill came the third day, and lasted three hours, with slight fever. If I had not in this case thoroughly evacuated the impacted bowels, I should probably have lost her. The eruption and itching were controlled by the electrical treatment on the face at any time when she desired to allay the heat and stinging pain. She says, "If I ever have erysipelas again I will have electricity if it is to be had."

HYDROPHOBIA.

Having had no personal experience in treating this disease with electricity, I cannot determine to a certainty how much benefit may be derived from it. The recent researches of Claud Bernard led him to this conclusion, that "the virus which occasions hydrophobia resides only in the animal's saliva. We have not yet

learned whether any *one* of the salivary glands is its peculiar seat, or whether it is indifferently secreted by all of them. No experiments have been made on this point, but it has been experimentally proved that the peculiar venomous principle does not exist in the blood; transfusion does not convey the poison from a mad dog to a healthy one." If the above is a fact, it must be conceded that the virus is transmitted only to and through the nervous system, and exclusively localized near and in the salivary glands, constantly secreting a viscid saliva which compels constant spitting. The spasmodic contractions which occur whenever drink is offered, would lead us to conclude it a purely nervous condition, causing an irritation of the whole system through the sympathetic nerves. If this theory is correct, we have implicit confidence that electricity, combined with galvanism, would control this disease, if the application could be made with good judgment before the convulsions and spasmodic tremors so affected the patient that it could not be applied. The water used, and the motion caused by the electric action seems to aggravate the spasms, and if not given in the early stages of the disease it is useless to try it.

While I was a student of Dr. A., who made electricity a specialty, he was called to treat a case of hydrophobia with it. The man was bitten by a dog six years previous, and the virus had been latent in the system all that time, and when it developed it progressed so rapidly and the spasms were so violent that they were aggravated by the wet sponges when trying to make the application, and the treatment had to be discontinued. After the man's death his wife was taken with the same symptoms, whether from sympathy, or by absorbing the virus from washing the cloths he spit upon, or from sexual intercourse, as this was a strongly marked symptom in the early stages, the doctor could not decide.

There is an important question in this case for study. Is hydrophobia a disease of the whole glandular system or of only the salivary glands? If so could enough of the virus from the semen be absorbed by the uterine nerves to poison the whole system so as to cause hydrophobia, or could the virus be absorbed while washing the cloths? I hope some one may have an opportunity of investigating with electricity. The wife was cured by it. I cannot determine in my investigation of the case how she contracted the disease. I am confident that in time electricity will be utilized, and its use so perfected that every blood poison will be cured by it, let it be cancer, hydrophobia or any other.

SMALL POX OR VARIOLA.

This disease is too well known to need a minute description. It is divided into two kinds, *distinct* and *confluent.* The latter is more dangerous than the former. To treat this disease successfully with electricity it is necessary to give electrical packs, for the reason that the current will not penetrate through the pustules. What we desire is to relieve secondary fever, and by the allotropic change kill the virus, and absorb it with the wet sheet. This treatment will relieve the itching and save pitting. The face can be treated for this purpose in the same manner as described for erysipelas.

To make a pack, take a sheet wet in hot salt water, and place warmed woolen blankets on the bed, under the wet sheet. Lay the patient down as quick as possible, naked, after adjusting the plate attached to the negative current between the woolen blanket and wet sheet. Wrap up warm, putting hot bottles to the feet, with the positive current at the same place. Let the current run for twenty minutes, if possible getting them into a perspiration. Afterwards if the patient is warm move the current at the feet over the stomach if it can be

done without chilling. Give acid drink if the tongue is red; if white, alkaline. Grape juice is a good acid to use throughout the whole sickness, with a light diet, a cool and dark room, and the use of disinfectants around the patient. This treatment is more successful than strong medication.

SCROFULA.

Scrofula is an insidious disease. We see its effects only after it has broken down cell tissues, except that in the history of the case we often trace hereditary taints. All scrofulous sores are amenable to electricity scientifically administered. Galvanism will change and cure a chronic ulcer much sooner than electricity when applied locally. But this method may not be permanent, and there is danger of a metastasis of the disease. The proper way is to give general treatment and local with galvanism or electricity.

I treated a little girl with eleven indolent ulcers on one leg, and covering the limb from the hip to the foot. Her age was seven, and she had been sick for three years. She was so thin in flesh we could almost see through her hands. A continued surgical treatment had so affected her nervous system that she would scream every time the door bell rang, thinking some doctor was coming. She was very much frightened when I first commenced treating her, but I told her if I hurt her the least bit I would let her go home, and then she consented to try it. She liked the treatment and there was no further trouble. After about six applications the mother said, "The sores are growing worse, but she is better every other way, her appetite especially." The ulcers were arousing to a healthy inflammatory condition, they were sloughing more at their base, and we soon began to see the line of demarkation on each one. Healthy granulations were

soon forming, and all without any medicines except Cosmoline dressing Twenty treatments permanently cured her. I gave general treatment, and local by winding a wet towel around her leg, with the current applied with the plate.

ASPHYXIA.

In asphyxia from drowning, or suffocation from poisonous gases, or in asphyxia of new-born infants, the electrical current should be placed in such a position as to excite artificial respiration. Place the positive current on the spine, attached to a small plate, long enough to cover all the cervical and a part of the dorsal nerves. For a few minutes apply the negative with large plate (both covered with cloths wet in salt water,) over the phrenic nerve, letting the plate cover the upper part of the lung and heart, giving a slight shock every twenty seconds. Then remove the plate over lung to the solar plexus, under the left breast, allowing the plate to control both the stomach and diaphragm, giving slight shocks here also; making pressure on the abdomen at intervals with the hand. Holding up the arms also facilitates natural respiration. As recovery becomes certain reduce the strength of the current, and all other mechanical means, and wrap up the patient warm, leaving a light current running until considerable strength is attained, and the nervous system quieted. Many lives might be saved if the above application could be thoroughly studied and practically applied, as we hope in time it may be.

TOXICUM OR BLOOD POISON.

Toxemia from mercurial poisons can with a certainty be eradicated from the system by electro-thermal baths and general faradization. The rectum should be treated because it seems to locate near the sigmoid flexure and is the cause of many strictures in that part of

the bowels; as I said before, mercury, being a metal, has an affinity for metal and will be deposited on the silver electrode that is introduced into the rectum. The vagina electrode should be the one used because it will reach the sigmoid flexure, and diffuses the current more, making the treatment less disagreeable.

Toxemia from the poisonous effects of tobacco.

This is one of the most common diseases among men, and not one in a thousand that suffer every day from the poison of tannic acid ever gives tobacco the credit for numerous bad feelings. Men die every day from paralysis of the muscles of the heart, caused by tobacco, but because the post mortem does not reveal tobacco in the form of a leaf, doctors look wise and say "Died of heart disease." When will men learn wisdom? "Know thyself" is a good maxim. It is of no use to give electricity for diseases caused by tobacco, unless the habit is stopped. Men are said to be stronger than women, but few of them are strong enough to conquer their perverted appetites. If the habit is stopped this poison can be very soon thrown from the system, and the health restored if electrical treatment is resorted to.

Spider and snake bites.

The symptoms attending bites of venomous reptiles are such as not to be easily mistaken. Swelling commences in the part bitten, and extends rapidly over the whole body, attended with nausea and vomiting. If electrical treatments could be given before the constitutional symptoms were developed, only local treatment would be necesssary.

The first case of spider bite I treated was a servant of Mrs. Belva Lockwood, of Washington, D. C. The girl's arm was very much swollen and streaks of red followed every vein to the shoulder. I wrapped the arm and

hand up in a wet towel, putting the negative current in the hand, the positive on the back of the neck to the cervical nerves. After treating about an hour the veins had assumed their normal color. Two such local treatments perfectly eliminated all the poisonous effect. Every case I have since treated has been attended with the same good results.

SALT RHEUM.

This disease is only the expression of a scrofulous disease or eruption. The only safe treatment is to eradicate it from the system by a chemical change of the blood, and by building up the system. In cases cured by me I have discovered a sluggish stomach and imperfect digestion. It is stubborn but electricity will cure it if enough treatments are given.

POISON FROM IVY OR RHUS.

Electricity will, by producing the chemical change necessary, neutralize this and all vegetable poisons, and permanently relieve the system of all its bad effects. I have cured both the acute and chronic affections caused by Rhus Tox., by giving general electrical treatment.

ARSENIC, STRYCHNINE, MERCURY, OPIUM, CANTHARIDES ETC.

The proper way of using electricity for the treatment of persons who have been recently poisoned with any of the above, is to arouse the vital forces by general treatment and then give antidotes. The cases are more certain to be cured, and less exertion is necessary, than when the patient is walked, as is customary. By giving spinal treatment the system can be aroused in one-half the time occupied by any other mode. As soon as this is accomplished the antidotes will readily respond. Treat as described for asphyxia.

DISEASES OF THE SKIN.

Cutaneous diseases are largely the result of a constitutional condition, and must, if successfully treated, have general faradization. We have often cured eruptions on the face caused by indigestion. In these cases the tongue looks more like a grater than anything else and is rough and dry, showing a chronic condition of the stomach that would require a great number of treatments to arouse the vital action of the digestive organs. As soon as digestion is normal the eruption will disappear. I generally give what is termed beauty treatment to the face, if there are pimples there, in connection with the general treatment. Constipation causes many skin diseases. Take sponge electrical baths, using both vinegar and salt in the water; a vapor bath of vinegar, if possible, is the best, using the electricity in the bath. This is called electro-vapor bath. I sometimes order a quart of vinegar and cup of salt and full bath, if the patient has a bath tub in the house. This is excellent for a dry condition of the skin where it rubs up like flour. There is a want of acid in the skin. Hand baths of vinegar are better than none, if the others are not available.

CHAPTER XVII.

PYÆMIA AND REMARKS ON PRESIDENT GARFIELD'S SICKNESS.

"The symptoms which denote the existence of pyæmia are chills, occurring with no marked regularity, followed by profuse perspiration and great and increasing prostration, nausea, vomiting, delirium, a bronzed or yellowish color of the skin, and a peculiar sweet mawkish odor of the breath, compared sometimes to the odor of treacle. This latter symptom has been considered especially diagnostic, but I have observed that it is often absent in well marked examples of pyæmia, and that it is occasionally present where pyæmia does not exist in conditions of extreme exhaustion from anæmia. The specific cause and the precise pathological character of pyæmia are not fully determined. There is much probability, however, that it is a variety of septicalmea, and that it is induced by the reception into the system of the suppurating deposits of certain septic elements, or elements which have undergone a gangrenous or possibly only a suppurating degeneration."—*Hamilton's Surgery.*

I have never treated pyæmia with electricity, but knowing the value of the allotropic action of this agent I have been anxious ever since the death of President Garfield to have an opportunity of testing it in cases of pyæmia. If it will neutralize all other poisons why not this too. It will change all morbid matter in ulcers, scrofula, mineral poisons, etc. Dr. Hamilton says "It is not known to a certainty what the cause is" of pyæmia. In following up the bulletins of Garfield's sickness we

are led to the conclusion that the incision into the *pus cavity* caused the pyæmia by the absorption of septic poison, and by the depleting effects of the enemas and anodynes he did not have the strength to overcome the septic poisons.

With the actual knowledge of the power of electricity as a diagnostic, I am certain if it had been applied scientifically it would have located the ball, while the illness was in the inflammatory stage arising from the effects of the ball. I do not think a metal in the body could attract a magnet outside, unless it was a strong magnet, for the reason that nerve centers have stronger magnetic properties and the magnet would be attracted towards some nerve center instead of toward the ball; but by passing the sponge as described in chapter on diagnosing it would have detected the spinal injury, and the nerves would have been sensitive throughout the whole track of the ball, and in that manner located it.

I hope this subject will be further investigated by scientists whose opportunities in hospitals and other prominent positions will allow them to continue this interesting subject.

CHAPTER XVIII.

EXTRACTION OF FOREIGN BODIES BY THE ELECTRO-MAGNET.

Dr. Delare has suggested the electro-magnet as a means of extracting foreign bodies from the eye, urethra, ear, etc. He states that it has been used for the purpose of extracting pieces of iron and steel from the eye since the days of Fabrice de Hilden. Delare had his attention called to the subject by an attempt which he made to extract a piece of a pin from the external auditory canal. A slender magnet was prepared by M. Fasse, which could be bent at will, but it was found to be without sufficient power. Then M. Fasse suggested the idea of the electro-magnet for this pnrpose. The advantage claimed for this method of extracting foreign bodies is that it produces no sensation on the surface of the tissues, and is less liable to injure them than the forceps or probe."*

In this connection I will say that by taking the eye cup and filling it full of salt water and attaching the negative current to it, and tying the positive current on the back of the neck and applying the eye cup to the eye, the electricity will attract the foreign substances into the water, no matter of what nature. Keep the eye open as much as possible while the application is being made and it will only take a few minutes to extract the substance and quiet the irritation.

*Translated from Lyon Medicale in "New York *Medical Gazette*," Aug. 20, 1870.

CHAPTER XIX.

BATHS.

We have one serious drawback in the use of mineral baths and other kinds of water treatment. While the patient is under treatment and for a time afterwards, he seems benefited, because the baths have opened the pores of the skin and have cleansed the clogged muscles of their impurities that had caused his suffering. Perhaps he had been troubled with rheumatism, but now it has gone and he is a new man in feeling, and goes home and tells his neighbors he was cured at So-and-So's springs or water-cure, as the case may be. But wait awhile; as soon as the liver or kidneys, or whatever may have caused the rheumatism, can deposit the poison in those muscles, he will say "I feel my trouble again, I must go back and be cured." Had the water treatment reached his liver, kidneys or the cause of his disease, as it reached and eradicated the trouble for the time being, he would have been cured.

We have used baths of all kinds for years and derived much benefit from them in connection with electrical treatment. Electricity starts the secretions of the various glands, arouses the organs to throw off their sluggishness, and then, with the baths and mild cathartics, carries off out of the system the impurities that would settle in the muscles or on the nerves. With my treatment patients improve after going away and continue to do so even faster than while under treatment. Why? Because the rubbish has been cleared away from the drain and the backed up material has a free outlet and will rush through, until only the normal amount re-

mains behind. So we find it necessary to understand all treatments, to examine the case thoroughly and from the many modes choose the best and leave that which is of no benefit. No matter if the anchor sheet of tonics, quinine, is cast one side, providing we know that electricity is a better tonic and stimulant and leaves no ill effects.

CONVALESCENCE.

Electrical treatment acts like a charm, for the reason when there is a lack of vitality it is supplied by the tonic action of this remedy, the most agreeable results immediately following its application, especially in the case of weak and debilitated children. I had been treating a little boy whose appetite was poor, who was thin in flesh, and blood, but with no particular disease noticeable except debility, After giving him eight treatments (I had designed giving him ten) I met him on the street playing. I said to him, "Eddie, why don't you come for more electricity?" He replied, "My Pa says I must not take any more. He can't get money to buy me enough to eat." After the vital action of the stomach is aroused Dame Nature will finish, and after she takes it into her hands the patient is lost to us and we resign such cases with pleasure.

IMPROVISED INSTRUMENTS.

Sometimes in the absence of instruments we improvise one for the treatment of hemorrhoids and uterine troubles. Take a copper wire 16 inches long, double in the middle and twist, leaving a loop for the reception of a sponge or piece of cloth. A rubber tube passed over the wire will insulate it, and it can be hooked to the cord from the machine. For piles take a copper wire about three inches long, enclose it in a rubber tube two inches long, (a piece of rubber tubing from an old

syringe will answer, just enough to insulate the wire,) and bend it at both ends. Tie a small sponge on one loop and bend the other end in the form of a hook to attach to the battery cord from positive post. Insert this wire about an inch above the anus to the hemorrhoids. This will remove inflammation while giving the general treatment with the negative current. In treating inflamed urethra take a tape needle, wind it with fine linen, oil the linen and thread the needle with fine wire and attach the wire to the cord, sometimes using the negative above and around the other, while the vagina electrode is used. For males use a silver catheter, if no other instrument is available.

CHAPTER XX.

Head and Throat Diseases.

CATARRH.

There is no affection except consumption, that more effectually obstructs the action of respiration than catarrh. This disease affects the air passages of the head, larynx and bronchial tubes. It causes the blood to become impure because the obstructions will not allow enough oxygen to enter the lungs to purify the blood for vitalizing the system. The throat is more or less involved. Consumption and other diseases often result from catarrh. It seems to be a stubborn disease to cure with medicine, but not so with electricity. If very chronic it takes a number of treatments.

For treating this disease the local stimulation must be through all the nerves over and around the eyes, and each side of the nose, and all sore nerves should be treated with the negative current. Use the positive with tongue instrument to the roof of the mouth and up in the nose, because that is a mucous membrane. In using the douche fill it with salt water first and run fine wire into it through the rubber tube. Tie a small sponge onto the wire that comes out of the tube that is inserted in the nostril; attach this wire to the negative current, leaving the positive on back of the neck or near the spine. The current will be felt as the water passes into the nose. Then fill the douche with some mild astringent and use the same way. Colds, acute catarrh, are also cured in this manner.

GOITRE OR BRONCHOCELE.

This disease is an enlargement of the thyroid gland. It is not dangerous but very troublesome, and affects the pride because of its ungainly appearance. Electricity will remove the enlargement if the treatment is persevered in. Salt water should be used to pack the throat at night and wet the sponges in when treating. To save time tie the positive current on the back of the neck, the negative current over the enlarged gland and let it run as long as convenient, giving the patient something to read so as to amuse him and save the physician's time.

QUINSY AND OTHER ACUTE THROAT DISEASES.

Quinsy is a disease of the tonsils and mucous membrane of the throat. Having been troubled with this disease all through my early life, I am happy to say that electricity is a specific in preventing its termination in resolution if treated in time. If suppuration has progressed too far it cannot be discussed, but treating it with electricity will hasten suppuration.

The disease should be treated as soon as swallowing causes pains in the ear. For local treatment tie the positive current on the back of the neck and attach the negative to the ear instrument; if you have none take a small wire and wind it with wet cloth and treat inside the ear. Find the sore nerve that hurts in swallowing, it will pain at first, but in a short time the soreness will be nearly or quite gone; then treat all around the ear, externally. Two such treatments will absorb the inflammation, and obviate the whole difficulty. The writer is obliged to treat quinsy in this manner two or three times every winter.

Sore throats from colds can be controlled in the same manner, and colds in the head by treating in the throat

and over the nose. The electrical treatment arouses the vital action of the mucous membrane. If it draws the soreness to the lungs, follow it up. I have followed up a severe cold in this manner until it would be felt in the limbs; then by treating down to the feet it would be the last of it. This is strange, but experience is a good teacher.

CONGESTIVE HEADACHE.

This condition is caused by imperfect circulation. Give general treatment. The extremities must be treated each time by putting the feet in hot water, with the positive current in the water or the plate to the feet. Give head treatment also by applying the negative current to the base of the brain while the positive current is on the spine lower down. Treat over the eyes and around the ears. Be careful of diet and give some mild cathartic if the patient is constipated. Sick headache is cured by treating the digestive organs.

TOOTHACHE.

It is in the cure of this trouble that we see the immediate benefit of electricity. Apply the negative current in such manner as to let it run into the sore nerve leading into the diseased tooth, and positive current on the back of the neck. If allowed to remain an hour it will remove all the inflammation, and it may not be heard from again for months or years, for the reason the ulceration at the root of the tooth has been absorbed. If the treatment is given only a few minutes it will be liable to arouse and cause more pain. Even then it will be of shorter duration. If teeth are sensitive to the cold treat the nerves of the face that lead to the teeth and strengthen them, especially the nerve center of the fifth pair over the ear, where all the nerves of the teeth arise. While the current is on the nerves, let it be

neuralgia or simple toothache, it quiets the pain. Many of my patients go to bed at night with electricity applied to the painful nerves, go to sleep and wake up without pain.

CHAPTER XXI.

NEURALGIA.

Neuralgia is a disease of the nerves, and may effect any nerve in the human body. It is characterized by darting pains, recurring at intervals. The nerves are inflamed by effete matters from the blood settling upon them, clogging them up, making it difficult for the passage of nerve or electric force. The origin of the impurities may be from mineral poisons given for medicine, or from indigestion, constipation, etc. Nature, ever ready to expel functional invasions, makes a greater effort to propel its nervous forces along these blocked up roads, and that effort causes the shooting pains, as every thing, such as wind, heat, cold, water or electricity travels in wave motion. Neuralgia is worse in sudden changes of the weather, because the electrical radiation of effete matters is suddenly checked by the closing of the pores of the skin, from the positive electric action of cold, leaving the system in a negative condition until it can gather power to regain an equilibrium. If this equilibrium cannot be restored because of general debility, or an excess of carbon in the system, as in plethoric persons, then neuralgia or rheumatism is the result. Quinine in large doses should not be taken for neuralgia; the diseased nerves are on a strain and may be paralyzed by its use. This paralysis may not continue but the nerves are liable to be permanently injured, as I have found in many cases which I have treated.

Electricity will take the place of nerve force, and being stronger its action will disorganize the effete matter by its chemical action, and drive it back into the

blood, relieving the diseased nerves in a few minutes. The case, however, is not cured, when this is accomplished; the neuralgia is better, but that is not a disease, it is only an expression of a cause that is still there, only to give the same trouble as soon as a slight cold or over fatigue of the still weak nerves, causes the effete matter, to collect again. To make the cure permanent the blood must be purified by general electrical treatment, the same as for fevers or any blood poisons.

Neuralgia in all its different expressions, in different parts of the body, will yield in every instance, if the nerves diseased are locally treated. No one need suffer one hour with this painful disease, if they will use the currents as I dictate in this work, the A B, with salt in the water. The salt has much to do with the chemical change. This is the remedy; electricity is the power behind to help the good work along. In all cases of neuralgia the nerves diseased are very sensitive to the current, and when treating in that vicinity if you strike a nerve that gives pain that is the one to treat. Of course the current must be very light at first, but it will be seen that as the impurities are thrown back the nerve will bear a stronger current. The treatment must be kept up until the current is transmitted through the nerve, and it is relieved.

UTERINE CRAMPS OR NEURALGIA.

This is to certify that I was a great sufferer for five years with cramp of the uterus. The pain was so great at times that my moans could be heard two blocks. I tried many physicians but with no relief. I visited a water cure for one year, but with little effect. I at last was induced to try Dr. S. E. Morrill with electricity, and after twenty treatments I was well; in three months my health was complete, and I had gained twenty-six pounds. I cheerfully recommend the Doctor to all who may be so afflicted. It is now three years since I was cured.

Miss Frank London,
Massillon, Ohio.

TIC DOULOUREUX.

Tic douloreux or facial neuralgia is one of the most painful afflictions to which the human body is liable. Its cause is inflammation of the branches from the fifth pair of nerves inosculating with the seventh; the fifth being a nerve of sensation, and the seventh a nerve of motion. The motion of the latter, in conjunction with the sensitive nerves of the former, make a twitching which is exceedingly painful. This seventh nerve is sometimes severed in order to cure this disease, but many physicians are disappointed in their want of success. They are probably not as well posted in the pathology of the disease as in the use of the knife; forgetting that the fifth is *en rapport* with the seventh and is still inflamed. When the seventh nerve is severed it causes paralysis and deformity of that side of the face and is a condemned practice in surgery. It were better for the surgeon to study electro-therapeutics and be convinced how simple and *certain* the cure of this and other inflammatory diseases is made.

As soon as the A B current is applied very weak the benefit is noticeable. For local application tie on the back of the neck the A, positive current, then take a small sponge or cloth wet in warm salt water and apply it under the ear to the seventh pair of nerves. This will bear a stronger current, not being a nerve of sensation. If possible have the current strong enough to jerk the whole side of the face or a light twitching will be noticed through that side of the face, that will dislodge the inflamed particles and relieve the branches of the fifth pair, so that the current can be borne on these nerves. Then take a small cloth about ten inches square, double it all over that side of the face, then attach to the plate the same negative or B current. Place carefully, or let the patients arrange it themselves, as they can bear it,

if the nerves are very sore. In the course of a half hour the inflammation will be nearly relieved, but it is better to treat an hour, and if the soreness is not all gone, treat again next day or in two or three hours. There is no harm done if inflammatory diseases are treated for hours at a time. Electricity in this form and manner of using is certain to cure as the sun is to rise in the morning.

RHEUMATISM OR NEURALGIA IN THE ARMS, SHOULDERS AND NECK.

Symptoms of this class *all* originate from digestive or liver difficulties and can only be relieved by general and local treatment to make the cure permanent. I have often treated the arms and shoulders locally to please the patients, and because the cost is less than for general treatment. I tell them the general would be the cheapest in the end, but they insist upon it. I have yet to see any permanent benefit from it. Some relief is felt, but give three thorough general treatments, a cathartic, and the fourth day a vapor or electrical bath, and the patient is nearly if not entirely cured of all pains in the arms and shoulders even if they were not touched locally.

LUMBAGO.

Lumbago or crick in the back is a disease of the lumbar nerves, caused by some kidney difficulty. To relieve this condition quickly, place two plates one over each kidney, having the plates large enough to cover all the muscles in that region, and at the same time have the kidneys come under the electrical action. Be careful that the plates do not touch each other, but place them as near the spinal nerves as possible without touching. I have relieved patients in twenty minutes who could not stand straight when they commenced. They could

go to their business for the day, taking another treatment in the evening or morning to finish the cure. It is better, if they can be held, to give ten or fifteen treatments, they will then have no return of the disease.

SCIATICA.

Sciatica is neuralgia of the nerves located in the hips. It arises from the sacral plexus which is formed by the lower lumbar and upper sacral nerves of the spine. From this plexus branches the greater and lesser sciatic nerves. The latter supplies the integument of the perineum and is often involved when the greater is diseased, as can be noticed when the electrical current is applied for sciatica. The greater sciatic nerve supplies nearly the whole integument of the leg and the pain often felt as far as the foot. It is the largest nerve cord in the body, measuring three-quarters of an inch in breadth, and passes out of the pelvis through the great sacra-sciatic foramen, it is a nerve of sensation and inosculates with other nerves of motion causing oftentimes jerking and pain in the whole limb.

On account of the anatomical position of this nerve, if the case is chronic the treatment, to permanently cure, must be thorough. Acute sciatica can be cured or relieved with three local treatments. For local application take two plates, and apply each side of the spine at the origin of the nerve and at the same time at the hips below the kidneys, not letting the plates touch each other; let the patient lie on his back (if you have no treating chair a lounge will do). It does not make any particular difference which current is used when the currents are so close together, but I generally put the negative current on the diseased side, and after it has run about ten minutes and apply it up and down on the spinal nerves in the sacral region, bringing the plate that is attached to positive electrode over the painful

nerve down the limb or over the faramen where it has its exit from the pelvis.

If the disease is chronic and the patient a lady the positive current can with benefit be applied in the vagina; if a gentleman, in the rectum, and the negative current over the same exit from the pelvis. By this mode of application the inflammation of the nerve that is inside the pelvis will be reached and much sooner relieved. After the above treatment the positive current must be put under the foot and the nerve treated all the way down. Under the knee the same nerve is nearer the surface and by treating there the current will be felt running down to the foot, thus opening the road the whole length of the sciatic nerve, the nervous force can pass along without giving pain. These are facts that experience has proved to be true again and again.

PARALYSIS.

Paralysis has become so frequent an occurrence that all physicians ought to study the subject thoroughly, especially the causes that lead to it. Since the introduction of electro-therapeutics, it has been robbed of half its terrors. Electricity in its different forms has been used more than in any other disease and with a fair amount of success; but I have found that almost any other disease yields more readily to electrical treatment than paralysis.

There are many kinds and it originates from various causes; and it takes an electrician of great experience to successfully treat it. To diagnose it and find the cause is the first thing to do. The nerves of motion are on the anterior part of the spine, and nerves of sensation on the posterior. Paralysis of motion is often caused by enlarged glands pressing the nerves of motion; there may be an indurated or hypertrophied liver, with the

enlargement pressing back, paralysis is oftener found from this cause than any other. Sometimes congestion of the liver will cause a paralytic stroke, and as the congestion becomes reduced strength is gradually gained until it congests again, and is followed by another stroke. The same may be said of the kidneys. I will cite a case in point:

While I was studying medicine one of the professors had a patient whose difficulty was an abscess forming in the right kidney. One morning the Professor found her so paralyzed that she could not move or speak; but after thirty-six hours the abcess broke, the pus passed off through the bladder, and she very soon regained the use of her body. Similar cases that have come to my notice under my own treatment have made me very cautious in diagnosing, so as to be certain that there is nothing making pressure on the nerves of motion of the spine. In the above case there must have been pressure on spinal nerves and the renal plexus, affecting the solar plexus of the sympathetic nerves.

Paraplegia is often caused by sexual difficulties, such as sexual excesses. Paralysis venenata by sedative poisons. This is nearly always the cause of palsy, and its victims still keep up the old treatment, both they and their physician being ignorant of the true cause.

I have had the greatest difficulty in curing cases caused by blood poisons, such as malaria and effete matter thrown back into the system, caused by constipation and indigestion, this is the form that attacks healthy, robust people, and they bear the disease until every nerve and muscle in the body becomes clogged, and before they are aware of it the enemy is creeping upon them, and they will complain of their hands and feet going to sleep or feeling numb; many cases of this character I have saved from paralysis by treating in time. It is

well in these cases to give thorough general treatment with such remedies as will act in conjunction with the electrical treatment (to clean up their dirty house and arouse and clean the kitchen or liver, as I tell them) such as physic, baths, packs and physical exercise.

All kinds of paralysis need general treatment, with local where the cause is found. In most cases of this disease, and in all the different forms, it takes from twenty to a hundred treatments to entirely eradicate it from the system. In palsy it is difficult to say whether electricity will effect a cure or not. In some cases there is a continuity of nerve fibre, and it is impossible to restore it with anything, but the health can be built up and the patient made comfortable. Muscular paralysis, where the nerves of sensation are the cause, can be removed and the nerves brought back to their normal condition by stimulating the skin with the A, C or D currents. The nerves being more superficial, respond more promptly in these cases. I have cured cases where a pin could be run through the muscle without being felt. I do not give these currents exclusively, but vary them according to my best judgment, as the case may require. Facial paralysis can be controlled by treating the seventh pair of nerves under the ear. This is a nerve of motion, but the branches of the fifth pair inosculate with the seventh pair, and they can be reached with less pain. The fifth ganglionic center is over the ear, and is so situated that it is in contact with a bone, making it painful to treat. The muscles paralyzed should be treated locally, with currents close together.

RHEUMATISM.

There are two kinds of rheumatism, inflammatory and chronic, and both these give expression in different ways. Sometimes the muscles only are affected, sometimes only

the joints, and sometimes both. Another form affecting the feet, is called gout, and still another form, caused by calcarious or lime deposits in the joints. All of these, except inflammatory, are very stubborn and hard to control with electricity, or any other remedy. Inflammatory rheumatism can be controlled almost as readily as neuralgia. It springs from the same cause, and must have nearly the same treatment. The cause is usually impure blood, the effete particles infiltrate all through the muscles, and these foreign bodies act as irritants, causing inflammation.

Instruction for treatment in neuralgia will cover all these symptoms in rheumatism. After arousing the whole system and effecting all the chemical change possible, give acid baths.

Chronic rheumatism is very hard to control, on account of the long continued collection of corrosive particles on the diseased parts, so thickening the parts with coagulated lymph that the muscles and nerves lose the power to respond to any treatment, unless it is very powerful and long continued. Galvanism will help in cases of this description.

INFLAMMATORY RHEUMATISM.

Dr. Morrill:—It gives me sincere pleasure to thank you in this manner and to express to you my appreciation of your mode of treatment in my recent suffering with inflammatory rheumatism—a treatment so gentle, so grateful, so humane that it will be a pleasure to tell the story of it that others may be benefited, who may be so fortunate as to secure your services. I believe your treatment peculiar to women and her diseases, the very best that is known. That God may aid you in this and other good works is the sincere wish of your true friend.

Mrs. S. E. Gay,
639 West Sixth St., Cincinnati, O.

June 15, 1872.

LOCK-JAW OR TETANUS.

Lock-jaw is frequently the result of injuries, and is so stubborn under the present method of treatment that it is regarded as a dangerous disease. The first symptom noticed is a slight stiffness on the back of the neck, which renders it painful and difficult to move the head; then a pain at the root of the tongue, with a rigidness and difficulty in swallowing, tightness across the chest, and pain just above the pit of the stomach, shooting through to the back. These symptoms are considered wholly nervous, and apparently it is a sympathetic disease. Some writers claim that the spinal system is the seat of the disease. I believe it is the sympathetic nervous system. "There is an excitable state of the spinal cord, and medular oblongata, not involving the ganglia of special sense. When the complaint has once established itself, the removal of the original cause of irritation is seldom of any avail; since the slightest impression upon almost any part of the body is sufficient to excite tetanic spasms." It would seem from the above that the symptoms more clearly indicate the great sympathetic nervous system to be the seat of local irritation, than the spinal nerves; the spinal nerves or a part of them would be involved in traumatic, but not in idiopathic cases.

A Mrs. C., whom I treated for uterine difficulties, had for years suffered with tetanic spasms, coming on at the least impression upon her body or mind. At one time she could not shake hands with her friends without bringing on a spasm. Her jaws would lock, her face would draw to one side and be fearfully distorted, and she could not move or speak until hot water was applied to relax the muscles. She was confident that the cause was uterine disease. She had been treated for that difficulty, but nothing seemed to benefit her except electricity, which she had taken at Indianapolis from a lady phy-

sician. She wished to give it a thorough trial,for she had more faith in it than in any other treatment for that especial disease. When I first commenced I could only give the slightest current, an infant a week old could take more. She would have slight spasms if the least thing happened in adjusting the currents. The positive or relaxing current would relieve her as soon as hot water. I gave her thirty general toning treatments before I dared use a speculum and give entra-uterine treatment, but with every treatment I had given uterus stimulation with the vagina electrode. After I began to give the local internal treatments I found the whole cavity of the uterus ulcerated, but controlled and healed them and cured the spasms with forty-five treatments.

INSANITY.

Here is a field for some philanthropist, to investigate insanity and its causes. He who goes through life depending upon books and the opinions of others, without any originality, need not take into his hands and underake to cure insanity with electricity.

The prevailing idea is that insanity is caused by mental disease, or that the brain is the seat of the malady. But in the cases of insanity cured by me I did not in one instance find its cause in the brain. All the difficulty was from a reflex action on the brain from local causes in the body, some from uterine disease, others from euremic poison affecting the whole nervous system; and as soon as the poison became neutralized and was disharged from the system health was restored and the mind cleared.

If electricity could be used by a physician experienced in treating nervous disease with this mode of application, from nerve centres, I am confident that our insane asylums could discharge one-half their inmates in a year's

time. I would like the opportunity of giving it a trial without dictation or interference. In connection with general treatment the fifth pair of nerves must be treated.

CHOREA OR ST. VITUS DANCE.

The predisposing cause is nervousness. The symptoms are a twitching and involuntary movement of muscles and limbs, and an inability to control the tongue or any part of the body. This disease almost invariably occurs in children; parents are often more frightened than they need to be. Being a nervous disease it is readily cured by electricity. In many cases I have cured, the cause was blood poison and the nerves were irritated with effete matters. When this is the condition treat as for any malarial disease, by giving a general treatment more spine stimulation, also on the fifth pair of nerves and on the tongue.

Case of Miss B., aged 10.—She was very nervous and could neither walk or converse. She had an unusually sluggish liver for a child of her age. I gave her general treatment, with cathartics, until she commenced to gain, I then gave spinal and local to the throat and tongue. She got well with twenty treatments, and remained well until the menstural period. She then had a return of the disease, but I controlled it again with two week's treatment. This time it was of more nervous character and did not take as many treatments. I could cite many cases that electricity has cured in my hands, and say with all confidence it is a specific for this disease.

STAMMERING.

This defect in speech is nervous and for that reason can be easily controlled with electricity. Apply the positive current to the mouth and tongue, and the negative current to the back of the neck. If no tongue instru-

ment is available use a teaspoon wrapped with wet salted cloth, and hold the wire of the cord to the wet cloth that is wound around the handle, holding the bowl of the spoon in your hand. All metals must be covered or the mucous surface will be burned and it does not conduct the electricity with as much certainty. Use the currents all over the throat, treating the tonsils. After treating the mouth, take a sponge and treat externally around the ear, reaching the fifth pair above and the seventh below. A firm pressure on back of the neck will reach the spinal accessory through to the vocal chords.

Stammering.—I was cured of the above by electricity; after being troubled from childhood, by Dr. S. E. Morrill.

John Boss,
108 Ninth street, Philadelphia.

INSOMNIA.

Insomnia or sleeplessness is caused by overwork of the nervous system, either from mental excitement or from some diseased condition affecting the sympathetic nervous system and causing an undue amount of blood to flow to the brain. This disease is on the increase, as the extraordinary sales of Bromide of Potassium and Hydrate of Chloral would lead us to infer. Of all the remedies that have been prescribed there is not one which permanently relieves it, except electricity. It has never failed in my hands to produce sleep, and I have had cases who were on the verge of insanity for the want of it. Many times they pass into a quiet sleep in five minutes after commencing the treatment.

Miss C., a teacher, aged twenty-four, had been nnable to sleep for weeks before her school closed, except for short naps, waking immediately with fright that would keep her awake. I first applied the current to the spine as described in chapter on general treatment, as that method acts as a sedative. I then took two small

sponges and attached both currents to them, making the application over the ears with very mild current, (move the switch over to the weak side) on the Gaserion ganglion, the nerve center of the fifth pair of nerves. She gave a start. "Why", says she, "the nerves are snapping and cracking." I continued the treatment and in less than two minutes she was sound asleep; the nerves were on such a strain that they relaxed with a snapping sound. This is the principal nerve to treat for insomnia.

HYSTERIA.

Hysteria is a purely nervous disease, caused by some uterine or ovarian derangement. This disease is probably due entirely to the sympathetic nervous system, and the general treatment should be directed to those nerve centers: for instance, the solar plexus; this nerve center is always in sympathy with the sexual organs. When we hear women complain of pain in the left side under the left breast we are suspicious of displacements of some kind. The uterus and ovaries must receive local stimulation. I could relate many cases of hysteria that were permanently cured as soon as the congested uterus or ovaries were reduced. I cured one case of hysterical mania caused by nymphomania.

How many times have I heard physicians speaking lightly of certain cases, "Not much the matter, only a hysterical condition." This is wrong, and shows the ignorance of such physicians. Hysteria and its mode of expression denotes its origin to any well-posted physician.

CHAPTER XXII.

INFLAMMATION.

"Perhaps there is no subject that has caused so much diversity of opinion as that of inflammation. The prevailing conclusion is that it consists of an engorgement of the capillary vessels, dependent on their diminished action and the relaxed condition of their cells, together with more or less accelerated motion of the heart and arteries," and that from such an abnormal condition arises the well-known characteristic symptoms, pain, heat, redness and swelling. As the inflammatory condition is increased, the whole system partakes of the excitement, and an increased amount of blood is thrown to the diseased locality, increasing the already distended capillaries, the contractile power growing less and less, and the tissues around becoming softened and enlarged, because the plastic lymph can not be absorbed, as the nervous action of the capillary walls is diminished or paralyzed. The surrounding tissue breaks down, and if not checked ulceration is the result. The amount and intensity of the pain depends largely upon the elasticity and sensitiveness of the part affected. If the bone is affected the pain is much more severe on account of the nerves being very sensitive near the osseus structure. Swelling arises from an effusion of coagulated lymph and serum.

Electricity applied to the seat of the disease immediately relieves the pain and congestion, let it be traumatic or idiopathic We apply the negative current immediately over the injury, contracting the capillaries, thus changing the circulation, vitalizing the surrounding tissues and

restoring normal action. Sprains, cuts and slight injuries of all kinds can be cured with two or three local applications. If the system has received a shock give a general treatment, which will quiet the nervous system, besides toning and strengthening circulation, and diverting the blood from the diseased part.

Many will ask why this is not more generally known? The principal reason is because the machines are made too intense and deficient in quantity. Take the A D current for example. The current is superficial, and would be too strong and the sensation too sharp for a cut or bruise; besides the current would not affect the arterial system, which must be reached to affect a cure.

And now we see the beneficial results from the use of salt in the water; its stimulating powers help to throw off the surplus heat. In local applications the currents must be close together; not so close that the cloths or sponges touch, however. Take a sprained wrist, drop one plate in a shallow dish of salt water, with the A or positive current, then wrap a cloth attached to the B or negative pole, just above or over the sprain, and immerse the hand in the dish; sometimes we place the B pole at the elbow (inside) and pass the current the whole length of the forearms. Injuries of the ankle or lower extremities can be treated in a similar manner. If the case is of long standing and coagulated lymph and serum are present, or if ulceration has commenced, it will take a number of treatments to cure it. The application can be made and continued an hour or more with great benefit and no danger of ill effects. In these cases we arouse an acute form of disease, which will pass off at the next application. This mode of application stimulates morbid lesion of the part, and hastens resolution. But in some cases the case does not fall into our hands until suppuration

has so far advanced that it can not be terminated that way. Then reverse your poles, placing the positive or relaxing current over the injury, and the negative close by to stimulate the surrounding tissues, and in a short time healthy granulations will appear, the line of demarkation will be seen and good results follow. Should there be pus it will "point" in half the time it would without the electricity. No matter how deeply imbedded it may be, the current will relax the tissues on the surface, and it will come there and not burrow along a nerve or artery. Felons and abscesses are very painful, but the current of electricity will relieve them, and if left for hours or all night on the inflamed surface, it will insure a comfortable sleep and an early termination of the suffering.

FEVERS.

Fevers are of frequent occurrence, and arise from various causes. The symptoms are languor and weakness, an aversion to exercise; the bones ache; chills are felt, followed by heat; the face is flushed, the pulse is quick, the head aches, the brain is clouded and the ideas are confused. All fevers, in my opinion, are caused by blood poison, either by malaria or other poison arising from indigestion or constipation; sometimes from inaction of the liver; and Dame Nature, ever ready to help herself when an opportunity presents itself, burns up this effete matter with fever, and if the patient has vitality enough to overcome the fever, they are the better for it.

I found in cases of fever the liver invariably congested, and of course doing nothing to expel the poison which is debilitating the patient. Electrical treatment in fevers shows its power immediately. I have reduced a fever in from 15 to 40 minutes, where the pulse was running over

one hundred beats per minute, by giving a general treatment. Sometimes after the fever had run for thirty-six hours, and no remedies had been of benefit, I run the pulse down and caused perspiration in twenty minutes. But reducing the fever does not cure the disease. After the fever is allayed, direct your attention to the liver. Reduce the congestion, which can be done with three treatments, and give such remedies as is called for. A mild physic is good treatment, with oil bath, or salt water packs over the liver and stomach. I very seldom make over three visits for bilious or even typhoid fever. Arousing the system is all that is necessary, and nature will do the work.

Fever and ague yields the most readily to electro-vapor baths. Have your patients come just before the time for the chill, and keep them in the bath until they perspire freely. That one bath will break up nine out of ten cases. In case the fever is on do not give a bath, the fever will be reduced much sooner by a dry general treatment, and at the same time you can arouse the liver and help to overcome the disease without quinine. My opinion is that yellow fever can be cured with electricity, if a thorough general treatment could be given, and plenty of salt used, for that disease is conceded to be xymotic in its character. Our own experience has been more with chronic disease. We hope the profession will investigate this treatment in its application to fevers, and See if this wonderful remedy will not be a power in their hands they never dreamed of.

PURPURA HÆMORRHAGICA.

This disease is rarely met with. It can be recognized by purple or ecchymosis spots, resembling bruises, which afterwards change to a greenish cast. Usually they appear on the lower extremities, and gradually creep up-

ward until the whole body is spotted. They occur in persons who are constitutionally inclined to hemorrhage. Such persons are necessarily debilitated, and the local cause of the hemorrhage should be found out. Treatment is general and local to the part affected.

Mrs. S., case of hemorrhage from the bowels during warm weather. She was covered with "spots," had slight uterine trouble, some pain over right ovary, which I thought was due to tenderness of the colon, near rectum, where the hemorrhage must have arisen. She was weak and debilitated generally. I gave twenty treatments, general, and local to the rectum. It is now eighteen months, and she has had no return of the bleeding, or any signs of the spots; her health is good and no distress is felt in walking.

CHAPTER XXIII.

Thoracic Cavity.

"heart disease."

When digestion is impaired and the stomach becomes distended with gas, the latter presses on the cavity containing the heart, interferes with its action, and in some (I might say many) cases causes death. This result is often attributed to actual heart disease. Occasionally sexual disease will cause these symptoms in either sex. Many persons suffering from what their physicians term "heart disease," have nothing more than a sympathetic affection from some of these causes. Equalize the electrical forces by promoting a good circulation. A few general treatments with electricity is what they need. But, as I have said, where actual valvular disease is present I claim that the disease is only modified and not cured.

to diagnose diseases of the heart.

If on passing the sponge over the region of this organ the muscles are tender to the current, you cannot diagnose heart disease to a certainty. In angina pectoris the muscles are sensitive, and this condition can be cured, even in cases where the patient faints upon the first application. The same with all muscular diseases of the heart, such as neuralgia, rheumatism, paralysis and hypertrophy. But if a fatty or valvular lesion is found, we do not think it can be permanently cured by electricity; but, as I have said before, by building up the general health the condition is relieved to such an extent that the patient would scarcely realize he had heart disease, and

might live to a good old age. I have a number of these patients who are seemingly enjoying the best of health.

Then there are nervous and dyspeptic difficulties, which often produce symptoms so closely resembling heart disease that it is almost impossible to lay down any reliable symptoms whereby the real disease can be diagnosed understandingly, or the prognosis given to a certainty. The pericardium or covering of the organ is often the seat of inflammation, causing severe pain and palpitation. This condition, however, does not denote actual heart disease, but it may develop into chronic pericarditis, thereby causing a good deal of suffering, but no actual danger. In congestion and enlargement of the liver the pressure causes an increased nervous action of the heart, producing such unpleasant symptoms that people imaginc they are afflicted with heart disease.

"DIED OF HEART DISEASE."

From the South Bend Tribune.

"In olden times it was thought that heart disease, of whatever character, was incurable. Of late years it is admitted by some that functional diseases of the heart may be cured. 'Now if we bear in mind that the heart is formed of the same kinds of tissue as other muscular organs, that it derives its supply of blood from the same source and in the same way, that its nutrition is the same, that it is governed by the same laws of waste and supply as all other parts, we must arrive at the conclusion that its structural lesions are amenable to the same treatment that succeeds in similar lesions in other organs.'

"We scarcely take up a paper without noticing 'Died of Heart Disease.' Does it never occur to the reader that diseases of the heart have not been thoroughly studied? We find upon investigating important nervous connections between the heart and other organs, in fact with the

entire sympathetic system of nerves, establishing a sympathetic relation between it and all parts of the body, supplied by these nerves, especially the stomach, liver and organs of digestion. It has been proven by Prof. Weber, of Leipsic, and M. Claud Bernard, that the heart is greatly dependent upon the pneumogastric nerve to regulate its action. If this nerve be severed in an animal the action of the heart runs wild, its pulsations cannot be counted. We therefore know that the pneumogastric is the regulator and not the motor nerve of the heart, and further when very quick pulsations of the heart are occurring, we know that this nerve is paralyzed or approaching a state of paralyzation, or else the sympathetic is conveying from the nerve centers some increased abnormal stimulus. From the above facts and experience of our own, more than we have time or space to give, we are led to conclude that many cases of reported heart disease died from stomach or other diseases affecting this nerve. Many physicians diagnose heart disease and treat for it, while it is only a sympathetic trouble, and by so doing, in many cases, let the cause kill the patient.

"S. E. MORRILL, M. D."

CONSUMPTION.

The American Cyclopedia says: "This disease presents itself in one of two forms: First, as small, rounded, semi-transparent granulations of a grayish color, varying in size from a millet seed to a pea, disseminated throughout the affected portion of the lungs. In the progress of the disease a yellow spot is formed in the center of the grayish matter and this gradually increases until the whole becomes of a uniform color. Second, the grayish matter is infiltrated into the substance of the lungs in irregular masses; the yellowish points make their appearance in these masses, increase and coalesce, until

the whole forms irregular round bodies, varying in size from a pea to a hen's egg, more or less soft and pliable, breaking down like cheese under the pressure of the fingers. After a time these yellow bodies undergo a new transformation. They begin to soften in the center, and gradually become converted into a thick yellowish fluid or semi-fluid matter. The abcesses containing this matter are termed vomical; by degrees their contents find, their way into the bronchial tubes and are expectorated, leaving ragged, irregular cavities in the lungs. These cavities when first formed are rounded, are rarely entirely emptied, and are commonly lined by a delicate false membrane. Old cavities are irregular in their form, presenting anfractuousities, and are commonly lined with a dense false membrane, while their walls and the neighboring pulmonary tissue are infiltrated with tubercle. The mucous membrane lining the bronchial tubes is connected with old cavities, is almost invariably inflamed and thickened. In a certain number of cases the trachea presents ulcerations varying in size and number. The larynx is more rarely affected, and here the ulcerations are usually confined to the vocal chords and the epiglottis."

Consumption usually begins with a dry, hoarse cough, shortness of breath, heat, pain and oppression of the chest, expectoration of matter which falls below the surface of the water, hectic fever, night sweats, eyes sunken and glassy. Is this mortality among consumptives inevitable? Will the time ever come when the destroyer of so many lives yearly will be understood and controlled? The cause, in the majority of cases, is impure blood; many times inverted eruptions. The tendency to weak lungs is often hereditary, and is then considered incurable.

The present mode of treatment is far from meeting the

demand. Cod-liver oil has been extensively used but with very little benefit. It fails because the stomach is weak and cannot assimilate it, and the remedy weakens all the digestive organs still more. What is most essential is to keep up the strength. If oleaginous oils are necessary the better way is to apply them externally and not overload the stomach with such indigestible remedies. When there is very much disorganization of the tissue of the lungs we do not claim to cure this disease with electricity, but when the lungs are not too sluggish and the circulation can be changed, the blood driven to the extremities, and the general health be built up, it is possible.

ASTHMA.

Asthma has generally been regarded as an incurable disease by all schools of medicine, their remedies being only palliative. The result of their treatment confirms the opinion of many that the remedy for this distressing disease is yet to be discovered, or the true pathology of the causes better understood. "To know a disease is more than its cure." "The pathology of asthma," says Dr. Dickison, "is difficult and obscure. The difficulty of breathing is two-fold and urges both during expiration and inspiration. It is hence plausibly suggested either that the muscular fibres of the bronchia are everywhere rigid, refusing both to contract and to dilate, or that in some portions of the air tubes these are spasmodically contracted, resisting both the entrance and exit of air."

There are two varieties of asthma, a catharrhal and inflammatory; in the former an excess of secretion; in the latter dryness accompanied with a cough. In the former there is a relaxation of the air cells, in the latter a contraction. Each condition always causes its own result. The expiration is impeded in the first kind and inspiration in the latter. Both forms of diseases cause

difficult breathing. In catharrhal asthma the condition is negative to the atmosphere, consequently the secretions tend to the mucous surfaces and when the system is positive to the atmosphere the secretions tend to the skin, leaving the mucous membrane dry and inflammatory. The two diseases are entirely different and need different climates; that which is congenial to one is detrimental to the other.

I have cured both kinds of asthma with electrical treatment, by changing the electrical polarities of the system. In negative or catharrhal asthma use the positive current to the mucous membrane, in the positive or inflammatory asthma apply the negative current in the mouth. In the latter alkalies are needed; in the former acid is wanting. Give whichever of these remedies is called for. Good general treatment will build up the general health, and purify the blood, and tone the muscles of the respiritory organs.

I cured a case that seemed very much aggravated whenever the liver became congested, the pressure on the diaphragm causing a pressure on the respiratory organs and causing severe paroxysms of asthma. The gentleman inherited the disease from his mother she having always suffered from it until after his birth. Since that time she had been free from it but he had been subject to it from his tenth year. Since he came under electrical treatment he has had only a few slight attacks of it and by treating the liver the disease is immediately relieved and the mucous membrane restored to a normal condition. The attack comes solely from the pressure of the congested liver.

PLEURISY, PLEURO-PNEUMONIA, PNEUMONIA.

All the above diseases yield readily to electrical treatment, for the reason they are acute inflammatory diseases. When these diseases are cured with electricity

the patients are in no danger of the disease causing adhesion. The inflammation is relieved before the adhesions are formed.

While in Washington, D. C., Mrs. B. Lockwood brought a woman, from one of the hotels very sick with typhoid pneumonia. She was brought in the evening. I gave her a general treatment that night; it quieted her so that she slept better than for a week. She was much better in the morning, and her system was aroused from its typhoid condition. I gave her six treatments. She was up after the third, and left the day of the sixth nearly well. She had no other treatment but electricity, except a mild cathartic.

This is to certify that from September 10 until November 13th, I was prostrated with bilious fever, which ran into yellow fever. The last of November my father came to St. Louis and brought me to Washington. I improved after my arrival here until December. From taking cold I was again prostrated with pleurisy in its most aggravated form. Having no reserve vital force my system could not with medicines rally, and my life was again despaired of. At this time Dr. Morrill came to this city from Philadelphia; and I heard he used electricity. Having had a child's life saved, who was very low with croup, I was desirous of having my father send for him and he did so. After commencing his treatment my restoration to health was rapid, and my present condition is a marvel to myself and friends, In fact, it seems almost a miracle for I received only seven treatments to relieve all pain, to gain my appetite and put me on my feet. Very truly, yours,

E. M. HARRISON.

No 4 Langdon Terrace, near Howard College.

I take pleasure in confirming the above statement made by my son, and would further state that he has gained, from December 25th to April 25th, sixty-eight and a half pounds.

M. K. HARRISON.

Washington, Jan. 13, 1864.

CHAPTER XXIV.

DISEASES OF THE KIDNEYS.

Diseases of the kidneys are characterized by pains over the hips, in the small of the back, and sometimes down to the ureter and the bladder. To diagnose these diseases with electricity care must be taken not to confound them with sexual troubles. If soreness is complained of over the crest of the ilium we are fairly certain the kidney is at fault, but when the sensitive nerves are not reached until the sponge passes below the lumbar region we may mistake it for sexual diseases, or the latter may be mistaken for kidney disease as the case may be. The tenderness down the groin may be the round ligament or spermatic cord. But time and experience will teach the electrician the difference. In sexual disease the nerves are very sensitive in the region of the hips as far down as tne coccyx, and occasionally including the sciatic nerve, which is also quite sensitive; while in kidney troubles the tenderness is in the lumbar region.

All diseases ot the kidneys are amenable to electrical treatment. Acute forms yield readily while in the more chronic cases it is necessary to increase or regulate the nervous action of the organs, by placing a current over either kidney and treating 10 or 15 minutes. Thus we stimulate the flow of urine which in some cases will be doubled. In diagnosing with electricity press on with the sponge and see if the current is felt on the back in the region of the kidneys. Enlargement of the right lobe of the liver or cancer of the pyloric orifice of the stomach may be mistaken for kidney disease. In per-

cussing these organs the patient should be placed on the abdomen which allows the bowels to float, while the other organs sink and leave the kidneys free from internal pressure.

I will cite a case to show the necessity of a thorough diagnosis: Miss J——, age 32, the daughter ot a wealthy senator, had been under medical treatment since 14 years of age. At that time Dr. S—— performed an operation for dysmenorrhea. She dated her trouble back to that "barbarous treatment". When I diagnosed with electricity, I could find no uterine trouble but discovered what seemed to be a tumor in the right hypochondric region. [She had known of it for some time, as had her physician but they paid no attention to it]. The tumor could be pressed back and the current when passed into it could be felt very strong in the kidney and would cause a nauseating sensation in the stomach. I knew then we had enlarged capsule complicated with chronic nephritis to deal with. I also found a slight hemorrhage from the urethra which had been treated as a uterine discharge. She had been partially paralyzed for two years and had been growing worse all the the time. At the commencement of my treatment she could neither get out of her carriage or go up stairs without help. Her right hip seemed to be the center of her difficulty, and the right kidney was the one with the enlarged capsule. This was the cause of the paralysis, she had been treated for 18 years by the best physicians, both in Europe also in New York and other cities, for uterine difficulty. The first indication or hint she had received of the true cause was the diagnosing with electricity. After two weeks' treatment she could go up stairs nearly as well as any one else. After four weeks' she was discharged cured, the tumor had disappeared and no further trouble was felt from either uterine or kidney trouble.

BRIGHT'S DISEASE OF THE KIDNEYS.

To Dr. Bright, of London, England belongs the credit of first presenting to the profession, a systematic and accurate description of the symptomatic and pathological phenomena of this disease. Hence the term to distinguish the malady."*

It is now conceded by a majority of physicians that this disease does not originate in the kidneys but in the blood in the form of retained effete matter, the urinary organs becoming diseased from being overworked by albuminous urine. If blood poison is the primary cause of this disease, why should it prove fatal any more than rheumatism or other diseases of the blood? It is evident that the nervous or vital forces are debilitated in this as well as other diseases, and what will restore the nervous action will eradicate the disease. Electricity *arouses vital action* in ALL nervous troubles, by producing a chemical change in the blood destroying the poisonous matter and therefore we claim that it is a panacea in this disease.

In this disease a general and thorough treatment should be given every day to the organs of digestion, and liver thus causing them to absorb the albumen and throw off the impurities and thereby relieve the kidneys of a portion of their work. All remedies given should tend to this end. Nothing that will irritate the stomach or lessen absorption should be given. Mild cathartics, oil, vinegar, malt, electro-vapor, electro-thermal or sponge baths will prove beneficial, and aid in the cure of this disease. Care must be taken though not to overstimulate the skin or excretory organs.

I will give an example of this that the reader may avail a like experience.

Mrs. Y—— had been taking electro-vapor baths, one every day of a regular practitioner for three weeks,

*Marcy and Hunt's theory and practice.

when she came under my care. I found the urine scanty, bowels constipated, and digestion impaired. Upon loosening her clothes a very disagreeable smell as of urine and fæces was thrown off from the skin. In this case the matter was overdone because it was a good remedy. I avoided baths for a time but gave her a general treatment, stimulated the liver, bowels, stomach, and kidneys to act, and thereby relieved the overcrowded skin. She made a good recovery. It is the fault of too many people, because one kind of remedy is good, to carry it to an extreme. No disease can be permanently cured by one thing alone; we must employ all good remedial agents.

CYSTITIS.

"Acute inflammation of the bladder, like nephritis, commences with chill, soreness on pressure in the hypogastric region, frequent pulse, skin dry and hot, urine scanty and high colored, and a constant desire to urinate which produces a scalding sensation in the urethra; sometimes nausea or vomiting, acute or dragging pains in the loins. If the inflammation is confined to the neck of the bladder, there will be an almost entire suppression of urine."* If acute inflammation is not terminated favorably within a reasonble time other symptoms arise, such as a mucous secretion, pain in the neck of the bladder and the urethra; we then diagnose the case as chronic cystitis.

To cure either form of this disease with electricity we generally treat to arouse the other organs, the glands, the skin; and treat to reduce the inflammation. We usually encounter some difficulty in this treatment, as the parts are inflamed, tender and swollen. An ordinary silver female catheter is passed into the bladder and the positive current attached, while the negative is placed

*Marcy and Hunt.

over the bladder and in the vagina of female, in rectum of male. In recent cases the current must be light, but a speedy cure will follow; if chronic, the current will arouse an inflammation, which in turn will be carried off. In cases where there is much pain and swelling I improvise an electrode, by taking a tape needle, passing a wire through the eye, wind the needle with a piece of thin linen cloth, oil well and pass through the neck of the bladder, then attach the current as above. The cloth prevents any burning, as would otherwise with a bare electrode. After subduing the local inflammation, apply one plate over the bladder with negative current, and the other over the region of the lower portion of the spine. With the positive current we change the plate to reach all tender points in and about the groin. The current in this disease must be light and even."

RETENTION OF URINE.

The above is caused by inflammation of the neck of the bladder or prostrate gland, sometimes from the effect of gravel or stricture. In treating wlth electricity the application must be made through the rectum with the positive current, and with the negative current around the penis and scrotum if the patient is a male; if a female the positive current in the vagina and negative current over the bladder. Sometimes if the inflammation is severe, treat for immediate relief by having the patient sit in water, with the positive current to the feet. If stricture is present read the instructions for that disease.

INCONTINENCE OF URINE CURED WITH ELECTRICITY.

Ed. Med. and Surg. Reporter:

In your journal, of August 14, 1875, I read an article, copied from the Lancet, written by Dr. F. N. Otis, upon the above subject. He says "sedatives and narcotics palliate but never cure the disease." He recommends

surgery in most cases, and says, "let me cite a case or two" to prove his practice.

Every physician has a right to his theories, provided they can be brought into practical use. I have practically proven that electricity is the best agent; better than either the knife or medicine, for they have both failed me, and electricity never has. It is a fact, known to the profession at large, that this disease is stubborn, and does not yield to treatment readily.

I will cite the first case of enuresis nocturna that I treated successfully with electricity. The patient a lady, twenty-six years of age, unmarried; she had no control of her urine at night, and very little through the day; she had scarlet fever when three years old, and since that time had been affected with this unfortunate disease. Knowing the benefit gained by the mechanical action of electricity, I determined to experiment with it in this case.

Upon examination, I found the meatus urinarius relaxed, and the mucous membrane of the urethra flabby. I took a female catheter, attached the contracting current to it, and inserted it into the urethra, and then applied the relaxing current over the bladder, applying the current strong enough to contract spasmodically the bladder, the seance lasting long enough to produce slight irritation (about an hour). This course of treatment was continued six successive days, until I had gotten up a healthy inflammatory action; I then gave a general downward treatment: by that means reduced the inflammation.

My experience in treating indolent ulcers and other morbid conditions, was to use the remedy that would arouse a healthy inflammation the quickest. Electricity never fails me. I gain this reaction by stimulating with the tonic current, following it up until I gain the result

desired, then dame nature, ever ready to help herself, will restore our patient, as she did in this case. Here we find seven treatments of electricity permanently cured (now three years have passed and the patient is well), what medicine failed to do in twenty-three years. I could cite other cases, in this city, where from four to ten treatments have cured them. If we find a stricture, or contracted condition, we must use the relaxing current to the part affected, let it be the vagina, urethra, or rectum, but in those cases we must have a reaction. When a patient complains of soreness, I tell them that is just what I want; this holds good only in chronic diseases.

S. E. Morrill, M. D.
Washington, D. C.

CHAPTER XXV.

Abdominal Diseases.

CHRONIC DISEASES OF THE STOMACH, LIVER AND BOWELS.

We quote from Dr. Foote's "common sense," a short chapter on the functions of the digestive organs for the non-professional reader. The explanation is novel and to the point:

"All of the organs named in the heading of this chapter are in some way accessory to the functions of digestion. Let us examine, then, the process which food goes through to nourish and support animal life. First, it is taken into the mouth, and is, or should be, thoroughly mixed with saliva, by proper mastication. This (the saliva) is electrically a negative because an alkaline fluid. Descending the æsophagus, or canal leading to the stomach, it is precipitated into the gastric juices of the stomach which are electrically a positive, because an acid fluid. Here, under the laws of electrical attraction, the gastric or positive fluid takes hold in earnest in penetrating and dissolving the particles of matter already permeated by the saliva or negative fluid. This process is further stimulated by the presence of nervous or electrical forces sent from the brain through the pneumogastric nerves, which keep up a constant telegraphic communication between the brain and stomach.

"By the time the digestible portions of the food become dissolved, and well saturated with the gastric juice, or positive fluid, it is carried into the lower stomach, or duodenum. Here it meets with two fluids, one, the bile, sent by the liver through the gall bladder and its ducts; and the other, the pancreatic fluid, furnished

by the pancreas. Now the latter, like saliva, is strongly alkaline, or negative, and inasmuch as that portion of the food which has been reduced to the finest pulp contains the greatest quantity of gastric positive fluid the combination at once takes place between them, the bile is slightly alkaline, or negative, while the indigestible portions of the food are only slightly saturated with the gastric or positive fluid, consequently these very naturally coalesce under the laws of chemical or electrical attraction. Thus we see how the nutritious matter is separated from the unnutritious or useless. Under the laws of electro-chemical attraction, marriages take place between inanimate bodies. The pancreatic fluid marries the nutritious, and the bile marries the innubilious. The former combination is sucked up by the absorbents to nourish the system, while the latter passes along down into the colon, where there is a sort of rendezvous for fecal matter. How well adapted the bile is to act as a consort, must be seen when it is remembered that it is a soapy kind of fluid, well calculated to lubricate the fæces and make them pass easily through the intestine. The bile, too, gives the yellow color to the fecal discharges."

"The correctness of this hypothesis has been illustrated by experiments tried by a celebrated physician in England. In these, a couple of rabbits were selected, which had been fed with the same kind and quality of food. On one of them he performed the operation of cutting the pneumo-gastric nerve leading to the stomach. The latter being deprived of the nervous stimulant the animal died from the effect of an overloaded stomach coupled with suspended digestion. The other rabbit, which was not operated upon, was killed after an interval of almost twenty-six hours, and on examination it was proved that the food in his stomach was entirely

digested, while in the other the food remained almost as crude and undigested as when it was swallowed. Another experiment was made upon two more rabbits in the same manner, except that after the nerves leading to the stomach were cut, galvanism was applied in such a way as to send the current through the disconnected nerves to the seat of digestion. At the end of twenty-four hours they were both killed, when it was found that the food in the stomach of the one whose nerves had been severed and put in connection with the galvanic battery, was nearly as well digested as that in the other, which had not been operated on. These experiments show that the stomach depends on the nervous stimulous which it receives from the brain.

"Similar experiments to those above mentioned have been tried with reference to the heart and other organs, in all of which they ceased to perform their functions when the nerves were cut, and commenced again as soon as the galvanic current was applied. It is not necessary for the purposes of this essay to demonstrate that galvanism and this nervous element provided by the brain are identical. It is evident that they are not; but they are so closely related, that one will take the place of the other, and this fact is sufficient to show that the two forces or elements are similar in their character, and that one is a modified form of the other."

Dr. Foote's wording of his theory is new and original, but it is a practical, common sense view of the process of digestion.

DYSPEPSIA.

The horrors of dyspepsia in its many forms are conceded to be indescribable. We meet with persons daily who have tried every known remedy recommended for its cure, but without receiving any benefit; indeed we assert from our own observation and experience that

there is *no medicine* known that will give health and comfort to the confirmed dyspeptic. We have had much to do with the treatment of this disease, owing to its almost universal prevalence; more than one-half of all our patients suffer from it. Electricity properly applied in harmony with the polarity of the nervous system, will cure every case, no matter of how long standing.

The immediate cause of dyspepsia is too rapid, immoderate, or irregular eating, excessive drinking and the improper use of stimulants, such as mustard, pepper and hot drinks, often to such an extent that the stomach is blistered; or at least the same amount applied externally would draw a blister. After the stomach has been loaded up with these irritating ingredients. Some people think they must exercise so as to digest what they have eaten, while others go to sleep after eating a hearty dinner. Neither of these extremes should be resorted to, but resting awhile after eating each meal greatly assists digestion. When the stomach manufactures impure blood, it deranges the nerves, and through them the whole system producing the thousand and one symptoms we hear complained of every day. Dr. Foote describes them thus:

"The spirits are depressed, there is irritability hypochondria, and almost insanity. When the blood is at fault, the lining of the stomach is liable to an attack of eruption, irritation, or inflammation. In this form of dyspepsia the invalid experiences pain, soreness, gnawing, burning and an abnormal appetite. When the dyspepsia proceeds from nervous derangement, the symptoms are usually palpitation of the heart, trembling at the pit of the stomach, with a weak or "all-gone" feeling of that organ, while the body appears attenuated, the countenance pale, the sleep is disturbed, and the mental and physical energies subdued. In

either of the foregoing forms of dyspepsia, the food passes through more of a rotting than of a digesting process and the gases emanating from the decomposing mass, causes acidity and flatulency. The nutritious substances are so contaminated by properties calculated to irritate or inflame the blood, that rotten apples would answer about as well for food as sound vegetables and meat; and they would impart as much benefit to the system."

Is it any wonder we have blood poison to contend with, causing every form of disease? The stomach becomes so inactive that all the medicine in the world would not arouse it, but electricity will, and it never fails if the treatment is persevered in.

I have permanently cured chronic cases of dyspepsia of from one to forty years standing, sometimes where the patient's skin looked and felt like thick leather, seemingly with no flesh, the muscles adhering to the bone, and the patient praying for death every day. We hope those affected with dyspepsia who read this treatise, will be once more inspired with confidence, and will stop taking strong doses of drugs, and send to me for a battery and book and be your own physicians.

Mrs. E., seventy-four years of age, commenced taking treatment with me for dyspepsia four years ago. She did not expect to be cured, for she had been suffering with it for over forty years. She came to see if she could get relief for sciatica, as I had cured one of her neighbors of that difficulty. I diagnosed her case and told her if she would stay long enough I could cure her of the dyspepsia also, but she had no faith. "Why," said she "I have doctored for that for forty years, have tried every school of medicine, allopathic, homeopathic, hydropathic, and also magnetism, and have starved myself almost to death. In fact I have scarcely enjoyed a

good meal in the last forty years, and you say you can cure me of sciatica in a week and dyspepsia in six weeks. I shall have to see it done before I believe it. If you can cure or relieve the sciatica in the time you say you can I will give the treatment a trial of six weeks." I told her that her age would be the only difficulty, but thought without doubt she could be permanently cured. She had at times, about once or twice a week, severe pain in the pit of the stomach, followed by chill then fever, often vomiting thick mucous with undigested food. She only had one of those paroxysms of pain while taking treatment. In a week after commencing her sciatica was so much better that she gained confidence and kept up the treatment for five weeks. She had not had any spasm of the stomach since the first week, and thought none would occur again. She has not had any trouble since with her stomach, and can eat everything she wants. The following two summers I gave her two weeks' treatment for congestion of the liver. The last two years she has taken some medicine for her liver, and it has kept her well, for a woman seventy-eight years old, and living in a malarial district. It is my opinion that if she would take two weeks' treatment each summer, she would reach the age of one hundred years or more. Why not? If I have kept myself well for fifteen years, why not a hundred? If it is true that electricity will keep up the vital forces, and through that keep the blood pure, where is the disease to come from? Even in cases of accidents, electricity will throw off the inflammation, from dislocations, broken bones and injured muscles, and relieve the pain immediately. These are facts, that any one who chooses can prove. I have cured sprained limbs in twelve hours, with two applications of electricity, that

without it would not have been on their feet for ten days or two weeks.

Now we ask, What is the use of suffering with pain, when all have within their reach a battery and book of instructions for using the same, (costing but 20 or 25 dollars,) that is as certain to cure if properly used as the sun is to rise. Why wait for your family physician to be converted to the truth? Wake up to the fact that you can learn to cure yourself, save money as well as avoid pain from either an acute or chronic disease. Follow my directions and prove whether I am an egotist or humbug. I do not ask all to try me, but do the work yourselves as I direct?

I was called to attend a Mrs. W—— in Wabash county; and she had been in bed most of the time for four months. Her physician treating her for hysteria and uterine disease, told her friends to let her eat all she wanted, to keep up her strength. He gave her tonics at the same time, but no local treatments for the uterine trouble. I gave an electrical diagnosing, found no uterine disease except a flabby condition of abdominal pelvic muscles. I diagnosed the case nervous dyspepsia. Her tongue was broad, thick and flabby. When a paroxysm was at its height her hands and feet would be cold, sweat stood in drops all over her body, and her pulse run up to one hundred and thirty. She would say she was dying, a frightened look would come into her face, and she would cry, "Oh, my heart, it feels as though it would come out of my mouth."

I did not see her in but one of those spells, I had only given her one treatment then, I came to the conclusion that the heart difficulty, as I could not detect any organic trouble, was caused by a pressure of gas. The left side was all she complained of, her left arm and shoulder and her chest in the region of the heart. I immediately gave a mild physic to clear the bowels of

the fermented poisons they contained and reduced her diet to tenderloin, beefsteak, and eggs, nothing else, no drink except water. I would have nothing that would ferment. The steak was rare and nothing but salt used to season it with. I gave carbo. veg. and calcarea carb. to neutralize the acids, also gave her a general treatment each day, and by the seventh had control of the disease. I had strengthened the nerves of the solar plexus, the diaphragm, and muscles of the stomach to that degree that she could eructate the gas with ease. Sometimes she would say, "I am dying" I would raise her in bed and strike with my hand between the shoulders and so start the gas and relieve her immediately.

I never could have cured this case if I had not put her on a non-fermentary diet. It was caused without doubt by large doses of quinine given her nine years before for facial neuralgia. She was a moderate eater and careful of her health, generally could not eat suppers since taking the quinia. I gave her twenty-four treatments, taking a month's time to put her on her feet, and she went to ride before I left. She is now (eight months after) well, and I am positive will continue so.

I claim the nerves leading to the stomach were partially paralyzed by the quinia and could not perform their office until the electricity toned and permanently strengthened them. This case was different from the majority of chronic dyspeptic cases for the reason the nerves would not bear but a very light current. When the nerves are paralyzed from being charged with effete matter it takes heavy electric currents to absorb the poisons and clear the nerve track, but when the nerve is paralyzed or overstrained, let it be from fright or strong medicine, the patient can take but a very light current. We often have to move over the switch to the weak side.

In the above case I relieved her very quickly after put-

ting the plates on the left shoulder blade and the negative over the stomach and across the chest in the region of the heart. I was careful to let the plate strike on a sore place under the left breast, that reached the solar plexus of nerves, also the positive current on the shoulder blade curve a little below the point of the scapular reaching the great splacnic nerve. In this manner I have treated this summer an old case of chronic dyspepsia of thirty years' standing. The lady's husband was a physician and she had tried everything but derived no benefit. She was nothing but skin and bones. I treated her three weeks and sold her a battery. She said when she went home, "I am going to put my trust in my *wooden doctor* and let my other one try his luck on others." I might give hundreds of clinical cases but only give those that were complicated and needed different treatments.

PAINTERS' COLIC.

The cause of this disease can be removed with electricity by making the application in the same manner as directed to cleanse the system of mercury, or other mineral poisons, using electrodes in the rectum, causing the lead to deposit on the instrument as in electroplating. Give general treatment also.

BILIOUS OR CRAMP COLIC.

This disease is caused by sluggish liver, and cannot be permanently cured until the liver is thoroughly aroused by a course of electrical treatment. It is then a certain cure.

INTROSUSCEPTION.

This disease responds readily to electricity, if it is carried directly to the difficulty. Take the vagina instrument and enter into the rectum with the positive current, then make a deep pressure on the bowels with

the negative current, then pull the plunger until you feel the muscles contract, keep up the tension until you feel the intestine give away; if you do not succeed in that way give a sudden shock with the current, using great care, and nine times out of ten success will crown your efforts. If the invaginated gut is inflamed that must first be reduced by covering the bowels with a large plate, with the positive electrode in the rectum. It will take two treatments probably to reduce the inflammation; you can give them some hours apart.

ELECTRICITY THE REMEDY FOR CHOLERA.

Written for the Cincinnati Eclectic Medical Journal, July, 1873, by Dr. S. E. Morril.

"In 1854 Dr. C. Meinig called the attention of the medical world to the great value of the primary currents of galvanism in the treatment of choleraic diarrhœa. Where the symptoms are violent, bowel discharges are attended with pains, cramps and spasms, or movements and *borborygmus* in the bowels, with washy diarrhœa, vomiting, cold sweating, cramping sensation in the legs, etc. The method he prescribed in such cases is thus given: The *positive* current of his portable (and powerful) compound galvanic battery was first applied to the spine, between the shoulders; the *negative* pole being placed on the abdomen, and occasionally moved higher up or lower down, according to the varying seat of the pains and coldness in the bowels. The good effects of the current were uniformly perceived at once, in a feeling of warmth and tone in the bowels, the pains gradually disappearing in about half an hour, both the diarrhœa and vomiting subsiding in the course of from two to five hours, when slight weakness was left, the urine reappearing shortly after the application of electricity, probably through the action of the current on the urinary organs. He says, "I have witnessed these results in eight cases, one of them being in my own person; in which case, to attest my confidence, I purposely abstained from employing any other remedy whatever. In one or two cases I observed the remarkable circumstances, that while the diarrhœa lasted, the

pricking sensation of the negative pole was almost nil; whereas, after the disappearance of the complaint, the spine was blistered in about a quarter of an hour by the power of the current. I certainly look upon these observations as of sufficient importance at the present juncture to induce physicians to test their validity, the more so as it can be done without great trouble, and without precluding the use of other remedies, and as the successful results here stated may very easily be accounted for. Whatever may be the difference of opinions as to the cause and nature of cholera and its symptoms, and consequent treatment, two points will be conceded by most thinking men: first, that it is of the utmost importance to keep up the power of the central, as well as of the digestive system, so that, if diarrhœa there must be, the other functions are disturbed as little as possible. Second, that in this disease, that remedy is the most effective, which is the most directly applicable, and the most independent of the disturbed digestive functions. In sending a mild stream of electricity from the spine to the abdomen, I *vitalize*, keep up the power of the whole central and digestive system, and by keeping in action all functions, I prevent the diarrhœa from taking a virulent and passive character. And all the effects purporting to be produced by the means generally employed, are thus produced much more perfectly, and instantaneously by this simple application. However, volumes of reasoning will never supply the test of experience. Therefore let electricity be fairly tried, and stand on its own merits.'"

My success in the use of electricity in all classes of disease, gives me the utmost confidence in Dr. Meinig's theories and experience. I will simply remark here, had the Doctor had the knowledge of both the induced and constant currents, how much more value would he have placed upon this agent, not only in cholera, but all classes of diseases.

If he could gain such results as he claims, by using the positive pole above the negative and with the constant current, well might we assert it an infallible remedy in this terrible disease now coming among us. It is a fact known to but a few electricians, that by reversing the currents

from the common way of using them, we warm the muscular system, and tone up the nervous system, where the other only excites the nerve forces in the same proportion as any stimulants for the time, soon followed by a depression, although it often benefits, but never to the extent it does by using the negative above the positive. Again, I think it both inconsistent and illogical to claim that the constant current, except in surgical cases, is the best adapted to disease. The advantages of the faradic over the galvanic in the successful treatment of disease is important for us to understand. This current is the best appreciated in general treatment. The passive exercise and consequent oxydation and other changes that result from the contraction of the hundreds of muscles that take place during the sittings, are capable of producing the most powerful tonic effects. If the interrupted current had always been used instead of the constant, electro-therapeutics would have stood far in advance of where they do to-day. We would now have to record only its happy results, whereas instead we often hear reports such as, electricity made such a one blind, or this or that one was paralyzed. From the fact of its burning the skin to a blister in Dr. Meinig's report, shows the current was too strong, and I only wonder he gained what he did by the imperfect manner of its application. Any metal electrode should either be rolled up in a wet sponge or cloth, whenever it is applied to the cuticle. Let us keep in remembrance that Franklin's kite strings could not conduct the electrical forces until they were dampened by the rain—water being one of the best conductors when only enough is used to wet the sponge upon applying it to the skin. The electro-thermal baths do not conduct the electricity to the nerve centers with that force and power as does the sponge applied to the nerve centers. To gain the best results, we must endeavor to make the application, so as to produce a direct as well as a reflex action on the diseased nerve centers. If we wish to cure cholera we must treat the respiratory and spinal nerves in order to equalize the circulation, keeping in mind the one important nerve center, the solar plexus, by a direct action on the great splancnic nerve.

To be successful in the use of electricity the direction of the currents should be understood. The negative current increases excitability; the positive diminishes it; for this reason, the currents should be reversed in acute diseases. The negative current increases reflex action, while the positive diminishes it.

The electrical current has a marked chemical effect on the blood, and very decidedly influences the circulation. The electrical currents have a powerful influence over nutrition.

"From the theory of cholera, as published by Sir James Murry, in the London Medical and Surgical Journal in 1832, and since amply confirmed in many parts of the world, it is to be concluded that the judicious use of electro-magnetic or galvanic passes, patiently persevered in, through the respiratory and spinal nerves, is one of the most essential adjuvants that can be employed *during collapse*, or that state of passive electric obstruction, which ought to be treated much like suspended animation."

An article by Dr. I. C. Atkinson in the Lancet of 1848 says:

"I am desirous at the present moment of calling the attention of scientific readers to a very interesting phenomenon, more or less present in the collapsed stage of cholera, which seems hitherto to have escaped the observation of medical men, viz.: animal electricity, or phosphorescence of the human body. My attention was first attracted to the subject during the former visitation of that fearful disease in the metropolis. It was indeed singular to notice the visible quantity of electric fluid which continually discharged itself on the approach of any conducting body to the surface of the skin of a patient laboring under the collapse stage; more particularly if the patient had been previously enveloped in blankets, streams of electricity, many of them averaging one inch and a half in length, could readily be educted by the knuckles of the hand, when directed to any part of the body; and these appeared, in color, effect, crackling noise and luminous in character, similar to that which we are all accustomed to observe when touching a charged Leyden jar.

"I may remark the coincidence that, simultaneously with the heat of the body passing off, the electricity was evolved; and I am therefore led to ask the question, are not heat, electricity and galvanic fluid one and the same thing? Does not the fact of passing off of both imponderable substances at one and the same time strengthen this conclusion?

"Again, is not the whole of what we call vital phenomena produced by certain modifications of the electro-galvanic magnetic matter and motions? And do we not find that these vital phenomena are continuously affected by the relative state of the surrounding electric medium? To what can we attribute the present fluctuating condition of the barometer, if not to it? Chemistry has failed in pointing out any other so ponderable a material as the cause of epidemic disease."

In the treatment of cholera, all are agreed that non-conducting substances on the surface of the skin aid essentially in the cure; and it should be further understood, during the disturbed state of the atmosphere while the epidemic is raging, for the purpose of restraining the electricity in the system we should wear woolen under-garments, gutta percha soles, so as to insulate as much as possible the body to prevent the heat and electrical fluid from passing off.

I believe with Sir James Murry, M. D., that one of the exciting causes of cholera is the result of disturbed electricity. I consider these noxious emanations to be disturbed electro-galvanic currents and electric accumulations—sometimes positive, sometimes negative—causing a want of electrical equilibrium in human bodies.

I will quote some of the daily observations made by M. Andraud, in 1849, in Paris, during the cholera there, which show a striking coincidence between the amount of atmospheric electricity and the virulence of the epidemic. In a letter to the President of the French Academy, dated June 10, 1849, he says: "The machine I have used for daily observations is rather powerful. In ordinary weather it gives, after two or three turns of the wheel, brilliant sparks of five or six centimetres. I have noticed that since the invasion of the epidemic I have not been able to produce on any one occasion the same effect. This was already for me a

strong presumption that I was on the track of the important fact I was endeavoring to find. Nevertheless, I was not convinced, because one might attribute the fact to the moisture of the air, or to the irregularities of the electric machine. Thus I waited with impatience the arrival of fine weather with heat, to continue my observations with more certainty. At last fine weather came, and to my astonishment, the machine, though often consulted, was far from showing, as it ought, an augmentation of electricity, but gave signs less and less sensible to such a degree, that during the days of the 4th, 5th and 6th of June it was impossible to obtain anything but slight crackling without sparks. On the 7th the machine remained quite dumb. This new decrease of the electric fluid has perfectly accorded, as is only too well known, with the renewed violence of the cholera. For my part, I was not more alarmed than astonished; my conviction was complete. I saw only the consequence of the fact already supposed.

"It may be imagined with what anxiety, in these movements of the crisis, I consulted the machine, the sad and faithful interpreter of a great calamity. At last, on the morning of the 8th, some feeble sparks reappeared, and from hour to hour electric intensity increased. I felt with joy that the vivifying fluid was returning in the atmosphere. Toward evening a storm announced at Paris that the electricity had re-entered its domain. To my eyes it was the cholera disappearing with the cause which produced it. The next day (Saturday the 9th) I continued my observations. The machine then, at the least touch, rendered with facility most lively sparks. Now it is stated that in the six days following the 8th of June, the mortality fell regularly from 667 to 355."

I can and do confidently say this disease might not be so fatal as it has hitherto been if our practitioners would study the cause of this disease, then the effect of electricity upon it. I have never treated a case of Asiatic cholera, but will give the way I applied the electricity in a very bad case of cholera morbus. I should treat cholera in precisely the same manner, I am confident with as good results.

I was called to see Mrs. M. at 8 o'clock A. M. I found her suffering with severe cramping, purging and vomiting. I immediately disrobed her, having her go to bed, rolled her up in a hot flannel blanket, put hot water to her feet, cold water on her head. After giving her ipecacuanha to quiet the vomiting, and Nux Vomica for the diarrhœa, I took Kidder's electro-magnetic battery, attached the rectum electrode to the positive pole, and inserted it into the rectum, placing the tongue instrument connecting to the negative current, giving a mild tonic current to tone up the mucous membrane. In about fifteen minutes I found the tendency to vomiting subsiding. I then connected the negative current to a large thin sheet of brass made for the purpose, large enough to cover the whole abdomen, wet a towel in warm salt water, and wrapped the brass electrode in it before applying it to the surface; that soon warmed up without burning the skin. In about ten minutes I took the positive current from the rectum, and connected it to a strip of thin brass electrode, wrapped in a towel wrung out of warm salt water. After adjusting this I covered her up as closely as possible in the flannel, then put a current on as strong as she could bear pleasantly. I had the bed put upon glass salt cellars, having no glass castors. After about half an hour she went to sleep. I continued the treatment an hour. I then disconnected her from the battery, leaving her asleep. She awoke in a few minutes after, seeming well except weak. I should with all confidence take a patient in a collapsed stage, and put him under the above treatment. I am satisfied it would save in a majority of cases if spinal and general treatment were given as described in this work with the above.

CONSTIPATION.

This disease is one of the most common and troublesome difficulties we have to contend with. One of the principal causes is a sluggish liver; the supply of bile is not sufficient to soften and lubricate the fæces.

The pernicious habit of taking strong cathartics depresses the nervous energies: first, by over-stimulating of the in-

testinal canal, followed by a relaxation of the muscular fibres so that the contractile power becomes weakened. If the practice is continued and kept up any length of time the peristaltic action is nearly lost, the bowels become flabby, the blood impure and the pores of the skin clogged, all because the system is overloaded with effete matter that should have been discharged through the bowels. In time the whole system becomes envolved and disease is inevitable. Constipation is often caused by a diseased rectum, such as stricture, hemorrhoids and paralysis of the lower bowel.

In this disease we give local treatment with the vagina appliance. It gives a more diffused action, because it is longer and smoother at the end, and does not catch in the folds of the rectum, and will pass as far as the sigmoid flexure. If pressure is made up towards the front and back toward the spine and it will not pass through, we are almost sure to find stricture at that point. Attach the positive or A post to this instrument, using a large plate with negative current over the bowels, letting it run ten minutes every treatment. After the bowels are treated take a narrow plate and apply the same current to the spine, leaving the other still in the rectum if it can be borne.

This course never fails to cure constipation, if the general health is built up. If any local trouble exists it must be reduced according to directions laid down in this work for treating that particular disease. There need be no failures. In all the years of my practice I remember of but one failure to cure constipation, and had I that case now, or another as stubborn, I would treat for stricture, at the upper portion of the sigmoid flexure, by taking a male rubber catheter and cutting off the end, tying a small sponge to a conducting wire, and working through the flexure, letting the current be as strong as could be borne, until a soreness was gotten up, and after that a few treatments would absorb the stricture. In one of my cases I succeeded in getting the catheter to the part affected, but the patient had to go home and the case went out of my hands. I believe it is possible to cure any case of this kind, if both time and energy are expended.

I have always contrived in some way to reach locally all diseased parts, which must be done to make a perfect cure of a great many complicated cases.

STRICTURES OF THE RECTUM.

This disease is apt to be found at or near the junction of the sigmoid flexure with the colon, and about two inches above the anus. Dr. Hamilton, in his work on surgery, gives the following treatment: "Attention to the bowels, improvement of the general health and the daily and careful use of bougies will in most cases afford great relief; but neither in this way or in any other form of permanent stricture of the rectum can the patient expect a permanent and radical cure." We are obliged to differ from the doctor, because our experience in treating strictures has been different from his. I have treated many cases and have yet to make my first failure.

Treatment: Apply the negative current over the bowels; then take the vagina electrode, well oiled, have the patient lie on the side, and pass into the rectum until it comes in contact with the stricture, then turn over on the back and attach the positive current. As much care should be used as in introducing a bougie; do not connect the current until the electrode is inserted. This will allow the stricture to relax, and in a short time the electrode can be passed beyond the stricture. After a short treatment over the bowels, change the negative current to the spine. If the walls of the vagina and rectum are thickened use an electrode in both these places, and the thickened tissues will soon be absorbed. Spasmodic strictures yield more readily than permanent ones; use the treatment in the some proportion. I will cite a few cases:

Some years ago I treated Mrs. M. for diseased rectum. She had used injections for years, never having had an action of the bowels without it. I found the wall of the rectum so thickened and contracted that an examination was impossible. In treating her I could at first introduce only a female catheter, gradually using larger electrodes as the walls ambece thinner. Of course an inflammatory condition

was gotten up to promote absorption. There is not the least danger in doing this, if you are certain you can continue to treat the case every day. The inflammation aroused the day before will be reduced at the next treatment, and will continue to alternate in that way, every other day, until all morbid growths are absorbed. When there is no more complaint of soreness you may know the disease is eradicated and a few treatments of the same kind will build up and heal the parts without leaving any cicatrix. The walls will heal and be soft and in a healthy condition as they were before the disease. It took two months to cure the above case. She is still living and healthy, though she said when she commenced treatment she did not expect to live over a year, because her bowel was growing up.

Mrs. C. was cured of stricture near the sigmoid flexure of fifteen years standing, caused by nitrate of silver pills. The deposit of mercury continued for a month, but as soon as the rectum was relieved of it, the stricture was absorbed. She had been treated for years and by the advice of her physician had taken a trip to Europe, but the stricture had never been discovered, notwithstanding the fæces were always ribbon-like, and flattened on two sides. I could enumerate twenty cases I have cured with no other agent than electricity, applied as each case needed. Good judgment must be used in treating this disease, and the application must be correctly made.

WORMS.

The presence of intestinal worms is usually considered an evidence of disease of the mucous membrane rather than a a distinct disease. When the membrane becomes deranged, these worms find a lodgment there. For these unwelcome but troublesome visitors, if in the small intestines, we give general treatment alone; if in the lower bowel or rectum, we give local treatment in addition to the general. Electricity vitalizes the intestinal canal, and then the remedies necessary will be assimilated, and destroy the parasites much sooner than when used without the electricity. We

usually prescribe: Pumpkin seeds, bruised, one ounce; water, one pint; make a tea and drink freely, followed with a dose of castor oil.

I cured a child who was having from twenty to twenty-five nervous fits daily. I diagnosed tape-worm, gave the above treatment, and the result proved my diagnosis to have been correct. The same success followed my treating a young lady for what had been called epileptic fits. I gave fifteen treatments, followed by the tea, till partial emesis was produced, then administered the oil, when she soon passed knots of intestinal worms, each containing twenty-five to fifty, some six inches in length. She soon recovered and has not had any epilepsy since.

HEMORRHOIDS OR PILES.

This is the most common rectal disease, the principal exciting cause being constipation. This is really only a secondary cause, the primary being a sluggish liver. Though not a dangerous disease it gives a great deal of annoyance, is quite painful and very difficult to cure with ordinary remedial agents.

In treating hemorrhoids with electricity, constitutional treatment should be given to remove the predisposing cause, and also local treatment to the affected part. For this local treatment we sometimes use the ordinary appliances used by electricians, but usually we insulate a copper wire with a small piece of sponge attached, passed by the *sphincter ani* into the lower part of the rectum and connected with the negative current, the positive being over the sacral plexus or lower portion of the spine. By using the currents in this manner the negative contracts the congested blood vessels and reduces the inflammation. When general treatment is given the positive is to be used internally. We cure this disease in from twelve to twenty treatments, one-half being local of a half-hour each, and the balance general and local one hour in length.

Fistula in ano can be cured by a similar course of treatment in about the same length of time.

PROLAPSUS OF THE ANUS.

Falling of the bowel or intestine is one of the troubles most amenable to electrical treatment. It usually comes on while at stool, and soon becomes very troublesome. Treatment: Take an oiled vagina electrode and introduce it into the rectum, attach the positive current and apply the negative over the bowels. Treat in this manner fifteen or twenty minutes, then apply the positive current over the lower portion of the spine, with the negative current in the bowel. The change is easily effected by changing the currents at the machine. If the bowel has been affected for a considerable length of time a very heavy current can be borne by the patient. As soon as the rectum becomes sensitive to the current a speedy cure will follow. We have proven this in a great many cases.

CHRONIC DIARRHŒA.

Chronic diarrhœa is often very obstinate. The mucous membrane becomes greatly irritated, and is often more or less ulcerated. All the digestive organs are impaired, the liver is torpid at times, then again very active, and the bile which has been dammed up passes away in free acrid watery discharges, causing tenesmus of the rectum. In all cases of chronic diarrhœa there is a want of nervous action. It is bad treatment to suddenly arrest these discharges with astringents, or to use any other medicine that will check them too quickly.

I have been very successful in treating it with electricity, and have cured nearly every case, some of many years standing, and with a good many complications, such as ulcerations of the rectum, often reaching to the smaller intestines. One case where the whole intestinal canal was ulcerated, from mouth to anus, was permanently cured with electricity, with the use of charcoal and salt, which was given as an antidote for mercury, which had been taken.

While practicing in Washington, D. C., I treated a Mr. S., who had suffered with chronic diarrhœa for ten years. He looked like a walking cadaver. His appetite was abnormal, as the food of course was not assimilated, the bowels were

ulcerated and the liver torpid; it could bear a heavy current, while the stomach was very sensitive to electricity, showing a want of equilibrium between the digestive organs. (When the vital forces are normal the same amount can be borne by each organ in the whole system.) He had contracted the disease in the army, and had been subjected to mercurial treatment which had caused the ulceration.

First, I had to get the mercury out of the system. The modus operandi was to use an electrode in the rectum. As metals have an affinity for each other, the deposit of mercury would cover the whole length of the electrode with a black coating, that would have to be scoured off. The ulceration being chronic this treatment aroused a healthy inflammatory action, and the bowels soon healed; the deposit of mercury was found on the electrode for about ten treatments. After this he began to build rapidly, and gained fourteen pounds in less than two months. General treatment was also given each day for fifteen days, then three times a week. When the rectum was treated, the negative current was used over the bowels, with the large plate. I gave him only twenty-four treatments. He had taken drugs enough to fill a drug store, and had tried all schools of medicine, homeopathy, allopathy, eclectic, etc. The more he ate the thinner he became. As soon as the cause was removed, which was mercury in the system, he regained his health, and is now, after nine years, still a healthy man.

A Mrs. R., of Dayton, Ohio, was cured of the same disease from the same cause. She had many other complications, such as stricture one about an inch and a half above the anus, uterine congestion, ulceration and retroversion, and all the digestive organs were diseased. She had great fear of electricity, but said she would try to overcome it if I thought I could cure her so that she could have a child. I treated nearly the same as described above. Six treatments absorbed the stricture so the electrode could be introduced without difficulty. She took treatment every day for six weeks and had gained in that time nine pounds. I left the city about that time, but received a letter from her saying: "I will not be able to go to Cincinnati to see you this fall.

I have gone to housekeeping. I dare not use electricity *now*. You can guess why." She was delivered of a weak, sickly child. Had she used electricity it would have been healthy and strong, but she took the advice of her physician and lost the child. He had told her that electricity would cause abortion. *It is not so.*

DYSENTERY OR BLOODY FLUX.

As this disease is confined to the rectum and other difficulties are sympathetic, we give general treatment with local with electrode in the rectum. In the case of a child use a silver female catheter and connect with the positive cord, using the negative plate over the bowels and sacral nerves. If the patient is old enough treat the tongue. If away from your instruments, take a teaspoon, wrap a clean cloth, wet with salt water, around it, and put the negative wire in the cloth and treat the tongue. This treatment will tone the whole mucous surface from mouth to anus. Also put a compress of salt and water over the bowels and use the indicated remedies. I will warrant that every case can be cured if the above treatment is given. Injections of salt and water are also beneficial. A non-professional can give treatment as directed, and cure their children without the medicine. Try it and believe.

DROPSY.

When dropsy is found in the cellular tissues it is termed anasarca; if in the bowels, it is called ascites; if the chest is the seat of the disease, it is hydrothorax. The symptom of anascara is distended, pale and shining skin. It is first noticed in the feet and legs; by pressure a dent of a white color is left on the skin. If not controlled the disease spreads upwards and in time involves the whole system. In the majority of cases the urine is scanty and is always highly colored. In ascites the distension is discovored in the lower part of the abdomen and slowly extends upwards, with a sense of weight and of water rolling about in the body when moving suddenly. As the distention increases the breathing becomes difficult on the least bodily exertion.

When the dropsy is of the heart and chest similar but increased symptoms are present. Upon lying down a feeling of suffocation is felt, and water can be distinctly heard if the ear is applied to the heart.

Dropsy is only an expression of diseases of long standing which have vitiated the blood, such as liver or kidney troubles, or dyspepsia. When treated with electricity particular attention should be paid to all the digestive organs. Vapor baths with electricity in the bath should be given three times a week until the water is absorbed. Everything should tend to invigorate the system and at the same time get rid of the water.

JAUNDICE OR ICTERUS.

Jaundice is caused by obstructions of the liver. The skin is yellow, fæces white, and urine of a high saffron color. Any pressure upon the excretory ducts of the liver will produce jaundice. The bile that should be appropriated by the liver is diffused through the blood, poisoning the whole system. The appetite is poor, vitality is low, there is a heavy feeling at the pit of the stomach, and the liver is almost invariably sluggish. This condition springs from various causes, and is oftener met with in malarial districts than in other places.

Jaundice is often fatal under the common method of treatment, but not with electricity. A few treatments, especially if vapor baths can be used in connection with the dry treatment will remove the obstructions. The general treatment arouses the liver and all the excretory organs, and the baths clear up the skin. It is surprising to see a person go into an electro-vapor bath, yellow, and come out white, after they had been given three arousing treatments.

HYPOCHONDRIA AND MELANCHOLY.

These diseases are more or less a derangement of the general nervous system caused by an inertness of the digestive organs, especially of the liver. Persons of sedentary habits and of melancholy temperament are most liable to them. The symptoms accompanying them could not be enumerated, even in the case of a single hypochondriac and each one has some symptoms peculiar to himself.

The prognosis of this disease, if electrical treatment is used, is favorable; the conditions originating from chronic difficulties of course take more time to cure, than diseases of a recent date. We however very soon see improvement in the mental condition of the patient, as soon as the nervous system can respond to the vital action of this wonderful agent. Upon diagnosing for the cause of these diseases (so nearly alike in their pathological condition) the liver will almost invariably be found hypertrophied, and bowels tense, and the peritoneum thickened from a long-continued diminution of the nervous force of the digestive apparatus. The kidneys will not respond for a number of days to the treatment. Give general treatment every day. The liver must be reduced to a normal size before health can be established, and all the symptoms will gradually yield if the treatment is persevered in.

OBESITY OR EXCESSIVE FAT.

This is cured by general treatment, which will change the polarity of the nervous system to such a degree that the abnormal assimilation will be checked. The diet must be muscle-making, without carbonaceous or heating properties. Obesity from excess in eating or drinking can be reduced. It is caused by gas and effete matters being retained in the system. I will cite one case, and how it was cured, so that it will be better understood.

Mr. P., of Washington, had been stumping for Hayes. On his return (I had previously cured him of sciatica) he said to me: "Look at my knee." It was terribly swollen, his whole body was bloated and his face was red. "I must be cured in just one week; I cannot spend any more time; I have been through Ohio, living on the fat of the land and drinking too much." I replied, "I will not try to cure you unless you agree to stay at least ten days." He received ten very thorough treatments, and he took some cathartics and vapor baths. When the ten days were up he was well, the rheumatism in his knee was reduced, and he weighed just twenty pounds less than when he returned. Two pounds of effete matter had been removed from his system every day

by the chemical action of electricity. That was the motive power, although other means were used in conjunction. If that amount of electricity had been given empirically, and nothing had been done outside the electrical treatment to carry off the aroused effete matters, of course he would have had a fever or inflammatory rheumatism. So we see that it is necessary to diagnose correctly, and then know how to gain the results necessary to be certain of a cure. When such cases come into my hands the prognosis of a cure is no guess work, but certain, if the case can be held.

CHRONIC LIVER COMPLAINTS.

The liver is the largest organ in the human body, weighing on an average four pounds. It is situated in the upper part of the abdominal cavity, immediately below the diaphragm on the right epigastric region. Its length is about ten inches, and its width six inches. The quantity of bile se creted by a man is from seventeen to twenty-four ounces daily. When the liver is sluggish, and what are termed bilious attacks occur, there is flatulency, pain in the stomach, foul breath, the tongue is coated, the skin and eyes are yellow, and there is great weakness. When the patient has a strong constitution abscesses often form in the liver, followed by hectic flush and cough. These abscesses often discharge through the walls of the diaphragm, and pus will be expectorated through the bronchial tubes, and then this condition may be mistaken for consumption of the lungs. When a patient's trouble is on the right side, it is more than probable that the above is the cause, but when on the left side and accompanied with other symptoms, it is supposed to originate in the lungs.

In this disease as in all others we have both the acute and chronic forms. The former is called Hepatitis. Its symptoms are pain in the right side, shoulder and arm, often between the shoulder blades, and back of the neck; sallow complexion, depression of spirits, failure of appetite, constipation of the bowels, highly colored urine, with deposits of reddish sediment, and more or less fever. Generally upon examination we find the liver enlarged or congested; pains

similar to pleurisy pains often catch the patient when taking a long breath. The disease is also often accompanied with a dry cough, and sometimes with nausea or vomiting.

If electricity is used, it must be in general treatments. Devote as much time as possible to the liver. Place the positive current at the spine, in the rear of the liver, with the negative current in front over the liver. When percussing the liver, if it is diseased it will give back a dull sound. When diagnosed with electricity it will pull up or not respond at all. When healthy the current will be felt through to the plate on the spine, and not pull or cause pain.

In diagnosing the case of Miss L., 26 years old, with electricity, I discovered what seemed to be a hard tumor, filling the right abdominal cavity, and adhering to the crest of the ilium or hip bone. The patient could not stand up straight, but leaned to the right and forward. She was very much debilitated and emaciated. She was being treated for uterine difficulty. Electricity did not point to the latter disease, but the symptoms of pain on the right side down the groin would lead to that conclusion. Examination, however, discovered nothing of that character. I then took my plessimeter and percussed the right side, and found the swelling, or what seemed to be a tumor, was the enlarged and indurated liver, reaching from the hip towards the left, nearly to the umbilicus. She was so thin I could diagnose to a certainty a chronic liver difficulty such as is very seldom met with. I concluded I had some work before me to permanently reduce the liver and cure the case with electricity. After giving her six treatments, I aroused the system sufficiently to cause her to have chills and fever. She had been subject to them some years previous. I gave her each day one hour's general treatment, and treated her locally another hour. She was very sick at times. For about three weeks her stomach would congest, and other symptoms were present that would have discouraged many. But my motto is "never give up," when I have so sure a remedy as electricity. After three weeks she commenced gaining rapidly. Her liver became very sore, and she could not bear one-third the usual amount of electricity. In six weeks the adhesions

were reduced. One day when reaching up she said, "Oh, something has broken loose, I can stand straight now." After treating some time longer, her liver was reduced to its normal size and she was a healthy woman.

For acute liver complaint, and nearly all acute liver diseases, it only takes from four to six electrical treatments to control the disease with the indicated remedies. "Oh," said one physician, when I informed him of this fact, "that would ruin our bread and butter." I replied, "Charge more for your visits." Any man would prefer to pay from three to five dollars for four visits than one or two each for fifteen or twenty visits. If a visit can be made in ten or twenty minutes for one dollar, and it takes an hour to give electrical treatment, a charge of three dollars would be no more than a fair price, and very few patients would object if it were explained. If it costs a man twenty dollars for medical service for twenty days, and he could gain the same or more benefit in five days for the same amount, would it not be better for both himself and the physicion? If these facts became known to the profession they should talk plainly and give their patients to understand the difficulties attending this treatment and the amount of time it takes, then give them or their friends a chance to do as they see fit about it. I am aware that the quickest and easiest way will be chosen by the majority of physicians until the people are educated to the fact that electricity *will cure* disease in one-fourth the time that medicine alone will, and they in time will demand that doctors to study and apply it, charging according to the time spent.

The inconvenience of carrying batteries and applying them to a very sick patient seems much greater than it really is. If the patient is sick in bed push the clothes up and wrap a woolen blanket around them. When the plates are applied keep the blanket between the plate and the patient's clothes, so as not to wet them. The plates can be applied in this manner without as much trouble as would be supposed. I was called to see a Mrs. H., who had been sick four weeks. She had been treated first for typhoid fever and then for lung trouble. Her physician considered the case complica-

ted and had been assisted by counsel, but they had given her up to die. When I arrived the house was crowded with friends and the patient was perfectly crazy, requiring two or three persons to keep her in bed. I saw she had hysterical mania, caused by metritis or inflammation of the uterus. I said I would take the case if they would discharge the physician then attending, as he was an old-school practitioner and I was a homeopath, we could not consult together to any advantage; also that I should use electricity in connection with the homeopathic remedies. I gave some medicine to quiet the excitement of the uterine system. That night she was so wild that I could not treat her. The next morning I found her so weak that she could not be undressed, so we pulled up her night dress and pushed under a woolen blanket. It took two to do this, while I adjusted the plates. The spinal treatment seemed to quiet and strengthen her right away. She said "How good that feels; it makes me stronger." The pulse was reduced in fifteen minutes from 120 to about 75 beats per minute. She commenced to sweat so that the prespiration stood on her hands and face. We kept her warm and she felt better. After treating her an hour I left. She was so much better the next morning that her husband went to his business, the first time in four weeks. By the third day she could help herself and I could apply the plates without help. By the sixth treatment she was sitting up. After the eighth she was dressed, and went to the table, but by over-eating she had a relapse lasting two days. She received only twelve electrical treatments and these restored her to health. She could not have lived ten days had it not have been for the vital force she received from it. The electricity relaxed the overstrained system, quieted the fever and strengthened her, all within one hour, by that means controlling the uterine trouble. I treated direct to the uterus with the vagina electrode. There was the *cause*, and to treat for malarial troubles, as those physicians were doing, showed how much they knew about their business.

CHAPTER XXVI.

Diseases of the Eye and Ear.

DISEASE OF THE CONJUNCTIVA.

Opthalmia embraces all inflammatory lesions of the eye. I have not as yet made any special study of the application of electricity to the eye, but as far as made I have obtained most flattering results, especially in acute or chronic inflammation, granulated lids and falling of the upper lid. The first named I have cured in from two to five treatments, but cases of long standing require more. I have cured "sore eyes" of infants of a week old by laying a cloth over the eye and using a mild current. But for these cases, and for granulated lids I generally use an eye-glass —found in every electrical case of appliances—with the negative current attached, with the positive at the back of the neck or on the spine between the shoulders. The glass contains a small piece of sponge, which should be filled with salt water, when needed for use. The patient places the eye in the cup, open if possible, and the current is applied as strong as can be borne with comfort, treating from twenty minutes to one-half hour every day. Falling of the lid is treated by placing the positive current the same as in the other cases, but putting the negative current at the corner of the eye, or below the ear on the seventh pair of nerves. While watching the current, you will see the lid quiver, that will strengthen the lid, and in a short time the trouble will

be one of the things of the past. Strabismus I have never cured, but cases are on record claimed to have been cured. Placing the contracting current on the weak muscle, and the relaxing current on the strong muscle, I should think would do it. The principle should hold good here as well as in any other portion of the human body. Foreign metallic bodies in the eye can be drawn out by magnetic attraction, with much less danger than by a surgical operation.

DISEASES OF THE LACHRYMAL DUCT.

The above is found in both the acute and the chronic form. We have usually in recent cases the symptoms of inflammation, redness and pain. If of long standing we find an accumulation of serum and pus. The secretions from the eye, or "tears," do not pass through the duct, but flow over, and run down the cheek.

Treatment: If the disease is acute lay a cloth or sponge over the duct, and pass a current through the part. One or two treatments will as a rule cure it. If chronic, more treatments are necessary, and in addition to that already described, we take a lachrymal duct electrode, and pass it into the duct, not using much pressure, as the adhesions are tense, and a false opening may be made. As the adhesion is absorbed, the electrode will enter the duct more easily. We cannot and do not use this long at a time, but treat some time, as for the acute form. No better absorbent can be found in nature than electricity, when used with good judgment.

DEAFNESS.

I have treated this complaint with moderate success. When diagnosing, if the ear is sore to the current you can be confident of success. When roaring is complained of (and this is a condition almost always found) it will cease as soon as the soreness is removed. Paralysis of the auditory nerve can be aroused and cured. But when the ear drum is dry and thickened, if the person is old a cure should not be promised because it will take a great many treatments. Sometimes deafness is caused by hardened wax. When this condition is found by using an ear speculum treat in the same manner as for other ear difficulties. Use an ear ap-

pliance or a wire wrapped in fine cotton and dipped in warm salt water, with the negative current in the ear and the positive to the spine or back of the neck. This will cause a cracking sound of the wax, and after a few treatments it will be loosened. Soften it with water and it can be readily removed by instruments. Bishop Morris, of Ohio, was cured in this manner so that he could hear a clock tick in another room, after being very deaf for many years. I have cured cases where they had been made deaf by spinal meningitis, scarlet fever, etc The negative current must be applied in, and all around the ear very thoroughly and with long treatments.

CHAPTER XXVII.

SURGERY.

RICKETS OR CURVATURE OF THE SPINE.

The above named disorder has its location in the bones and is sometimes called Potts' disease of the spine. It is caused by a want of calcarea or lime to harden the bones. Children of a scrofulous diathesis are most subject to it. The muscles weaken and the spine becomes deformed in consequence.

I have been very successful in this class of diseases with electricity. A little boy, five years of age, living in Washington, one of Dr Lincoln's patients, was brought to my office. The deformity was of such a complicated character it did not seem possible to cure him. His abdomen was much enlarged, his breast bone projected outwards, the ribs were flabby and distended, the spine had two curves, all having a tendency to shorten his stature. When standing on his feet he looked more like a frog than a child. He had not walked for two years, and had not been allowed by his physician to sit up even to eat his meals. I commenced giving treatment so as to strengthen the muscles. First, by passing the positive or A current over the whole length of the spine, at the same time rubbing and pressing the sternum and ribs with the negative or B current, also kneading the abdomen. I would keep up this treatment for an hour or more and then bandage as tight as I thought he could bear conveniently. After two weeks thorough treatment the ribs, breast bone and abdomen were wonderfully reduced in size, and the little fellow commenced to look taller and had a much healthier look in his face. I then put him on his feet; he had to learn to walk. When he had taken fifteen treatments I allowed him to be set at the table to eat. He only took twenty treatments in all. He gained five pounds in a

month from the time he commenced. He went to school after six weeks and was a strong, healthy child. I kept him in sight for over three years and he continued to grow and keep well. He was slightly deformed between the shoulders but would probably outgrow it somewhat. I have treated others with the same success. The principal object in treating this disease is to build up the general health, strengthen the muscles and cure the irritation of the spine. Electricity used with the salt causes the system to deposit its earthy matter where it is needed by strengthening the nervous system. The muscles and nerves of scrofulous children can be toned up in the same manner. It might be well to also order lime water or Calcara Carb.

FURUNCULUS OR BOILS—ANTHRAX OR CARBUNCLES.

A boil is a hard tumor, and is often very painful. The inflammation is active and effects both the skin and tissues. The cause is disorganized tissues. A carbuncle differs from it in this respect, that it is a more chronic form. Its effect is both constitutional and local, and often endangers the life of the patient. A carbuncle contains a core with several openings for the exit of pus. To disperse the latter with electricity it is necessary to give constitutional treatment to improve the digestion and purify the blood. In case of a boil treat it locally with the positive current; if it has progressed too far to scatter, this current promotes suppuration. If treated before fluctuation is perceived it can be absorbed into the system by general treatment, applying the negative current to the boil to scatter it, and the general treatment will absorb all impurities and obviate all danger arising from throwing the effete matters back into the system. A common boil can be disorganized readily if taken in time with local treatment alone, if too far advanced, use positive current and hasten suppuration as for carbuncles. while the electrical current is running on any inflamed part the pain is quieted for the time. I often let the current remain for hours or all night, and in the morning in many cases it will be ripe or scattered, besides giving the patient rest.

ULCERATION AND SLOUGHING.

"Ulceration is that process by which a solution of continuity is effected in a living solid." It occurs more frequently in cellular and adipose tissues than in any other part of the system. Ulceration is an immediate result of inflammation, for the reason that absorption is arrested by the inflammatory condition and advances to suppuration, ulceration progresses and a sloughing ulcer is the result. Any remedy can be used that stimulates absorption, restores the vital powers of the surrounding tissues and promotes resolution. Healthy nutrition in the part will be restored, and the normal function will be resumed. Electro-galvanism and electro-magnetism (the former is better to commence with) are the best remedies for stimulating absorption and their allotropic powers cause the tissues to heal by second intention in much less time than by any other known remedy. The line of demarkation will be discovered by the second or third treatment of chronic ulcers. Recent ones will commence healing after the first treatment. For chronic ulcers produce a constant or galvanic current by connecting two or three cups together without attaching them to a battery. Wet a cloth and cover the ulcer with it Apply the negative current near or over the ulcer, then place the positive current on the spine near the ulcer and continue the seance for an hour at a time.

GANGRENE OR MORTIFICATION.

Mortification includes the whole process of dying. Vital action, pain, heat and sensation suddenly cease. The surface frequently is studded with phlyctæna or elevated spots filled with putrid serum, with other symptoms of gangrene. Sphacelus or completion of gangrene is indicated when the part becomes cold, insensible, and shrunken and flacid and the color dark. When this condition is reached it is impossible to recover, and if allowed to remain in contact with other living tissues they absorb the poisonous fluids, and pyæmia will result. Energetic treatment is absolutely necessary, or the patient will die. If amputation is possible, and the condition of the patient favorable, it will

be the best mode of treatment. Give both general and local electrization, which will stimulate absorption, causing an allotropic change in the blood, equalizing the circulation and toning the nervous system. It also arouses the typhoid symptoms to a more active fever and allows the patient a chance for life. Mortification has been divided into acute and chronic. The former is humid, inflammatory or traumatic, the latter dry or idiopathic. Senile gangrene is a disease that attacks old people and is the result of deficient circulation.

PRIMARY SYPHILIS.

Venereal diseases in all their different phases are caused by a specific blood poisoning from impure connection. If neglected or improperly treated in the primary stages, and the poisonous virus allowed to enter the system, it becomes a constitutional disease and a most loathsome and filthy one Chancres may be divided into superficial, indurated or Huntarian, and phagendic syphilitic ulcers. The superficial chancre is confined to the skin, and the tissues are but slightly diseased. It becomes indurated about the fifth day, and is generally followed by constitutional symptoms. The effusion of plastic lymph into the surrounding tissues causes induration.

If the case can be treated with electricity before the constitutional symptoms appear, the induration can be absorbed by local treatment. Its application should be made with the negative current directly to the induration to stimulate absorption, with the positive current on the spine or as near to the negative as possible, as in order to discuss any abnormal growth, the currents should be in close proximity. Phagedenic ulcers are usually very rapid and destructive in their progress, increasing in extent, but not in depth, and accompanied with severe pain. This form of syphilis needs thorough general treatment, the same as for any other blood poison.

FUNGUS HŒMATODES OR BLEEDING FUNGUS.

A true fungus is a structure of morbid projection of dark blood color, bleeding profusely at the slightest irritation.

If not too malignant in its character, and the system is not undermined, electricity is the only remedy that will both build up the general health and absorb the fungus permanently. The local application contracts the small blood vessels which feed the growth, while general treatment excites and stimulates venous circulation. In this way the blood is diverted from the fungus, and it can readily be absorbed if no longer fed.

PIRNIO OR CHILBLAINS.

Chilblains are secondary effects of colds, are troublesome and painful, and attended with itching, this can be relieved by electrical treatment. Put the plate with positive current under the foot, rubbing the top of the foot with the negative current attached to sponge-holder. If you havn't this instrument wrap the current in a cloth. Sometimes putting the foot into hot salt water, with the positive current in the water and the negative under the knee, and rubbing down toward the foot, will effect a permanent cure in a few treatments. Corns and affections of the feet of all kinds can be cured in this manner. If the disease is painful or of an inflammatory nature the benefit is felt at once. In treating over the foot find the sore nerves leading into the inflamed part.

BURSÆ OR HOUSEMAID KNEE.

The bursæ is lined by a membrane, resembling the synovial fluid in appearance when diseased. A chronic bursæ is usually punctured, the effused fluid pressed out, and injections of strong stimulants are made to arouse healthy action. This result can be gained by treating with electricity and then the danger of stiffening the limb is obviated. Give a strong local application of the negative current to the bursæ, with the positive current under the knee or with the patient sitting on it with the plate under the thigh. To arouse stronger irritation use the brush. After three treatments the inflammation will begin to absorb the effusion of synovial fluid. At the seventh application, put the positive current to the foot, and rub down with the negative to relieve

the inflammation. Give as many treatments as are needed to effect a cure, which is a certainty if the treatment is persevered in.

BUNIONS.

Bursæ on the joints are called bunions. They can be reduced and cured in nearly the same manner as the above. If the joint is already inflamed put the foot on the positive plate, take the negative plate in the hand and find the sore nerves running into the joint, back towards the instep. The benefit will be noticed much sooner than when treated directly over the joint. The thickened and indurated muscles over the inflamed portion have paralyzed the nerves and the current does not benefit them as much as it does when treated back towards the instep. Be sure that the painful nerve is found which runs into the joint.

FRACTURES AND DISLOCATIONS.

After reduction by mechanical means, these cases are materially benefited, and the patient is hastened in his restoration to health, by local applications of electricity. The inflammation is reduced and pain allayed with three treatments. If there is inflammatory fever give a general treatment also. Subluxations, sprains, rupture of muscles or tendons can be materially benefited by electricity. I have with two local treatments cured sprains that would have laid one up for weeks without it.

VARICOSE VEINS.

In treating varicose veins the treatment must be from below upward. Use the negative current with the sponge, rubbing upward, while the foot is at or resting on the positive current. The negative current will contract and tone the blood vessels. Wind or bandage the leg and let the current run on the wet bandage every day, and the difficulty will soon be cured.

BURNS AND SCALDS.

The proper way to treat a burn with electricity is to apply the negative current to the burn either in water, or wrapped in wet cloths, put the positive current on the nerve centers

as near the burn as convenient. If the arm or chest has been burned, apply between the shoulders. While the current is on, the pain will be greatly lessened. This course of treatment if followed up will prevent suppuration, even if the epidermis is destroyed. Vital action is aroused and the part heals, without cicatrization.

ABSCESS OF THE ANTRUM.

When pain is felt in the roof of the mouth and indications point to the formation of an abscess, pass the current through from the inside of the mouth outward to the cheek. If not absorbed the accumulation of pus will be hastened and the lance will let the matter out. Then a judicious use of electricity will promote healthy granulation and no further trouble will be felt.

TALIPES EQUINUS.

This disease is known by the patient being unable to touch the ground with the heel, and being inclined to walk on the outside of the foot. It seems to be a contraction of the posterior muscles of the leg. It may be congenital or caused by paralysis, or other diseases. We have not had much experience in this disease, but will cite one case. A—— G——, aged 9, had not walked for three years. The limb was cold, the circulation was poor, and the leg was wasted. The cause was bladder trouble. His parents tried many remedies without success, and were going to have the tendo Achilles divided to let the heel down. I gave as strong treatments as the boy would stand, with the negative current at the hip and the positive below, and as the current relaxed the muscles drew down on them. After twenty treatments the circulation was good, the feet warmer, the heel down two inches and the boy was going to school. At present writing the little fellow is still improving, although no more treatments have been given.

CHAPTER XXVIII.

HOW DOES ALCOHOL INTOXICATE?

Read on the Capitol House steps, in 1875, before the Washington, D. C., Scientific Club, by Dr. S. E. Morrill.

Experiments have led scientists to the conclusion that alcohol depends for its intoxicating power upon the amount of oxygen the system is able to supply. When taken in small quantities no trace of it can be found in the excretions or secretions; but if taken in large quantities it is found all through the system.

Alcohol has a strong affinity for oxygen. If it is thrown on a fire it will burn rapidly as long as there is oxygen to feed it, but when no more oxygen is furnished for combustion the fire is all out. The same process occurs in the blood. A healthy person exhales every hour a certain amount of carbonic acid gas. Let him drink a small amount of alcohol and at first he will exhale more carbonic acid gas; but if he continues to take more alcohol than the system can furnish oxygen for, he will exhale less and less of this gas, and it will remain in the system. This is the poison which causes intoxication. It is not the presence of alcohol that intoxicates, but the absence of oxygen, caused by the too rapid combustion.

Starch and all we eat undergoes a chemical change, called oxydation, the result of which is vital force, but when alcohol is drank in large doses combustion is the result, the carbonic acid gas is increased, and the brain and nervous system become poisoned. The blood of a man who uses alcohol to excess is dark and sluggish. The cells of the brain are the first part of the system to lose its nourishment.

A drunkard is the same as dead until the effects of the alcohol have passed off and the newly absorbed oxygen begins to kindle fresh combustion, and afterwards true oxyda-

tion. It takes time for all the faculties to return. The man is cold even in the hottest weather, thus showing a lack of oxygen. His limbs shake, his mouth and stomach are dry, and he will freeze to death where a sober man will be comfortable. Alcohol is no food for steady workers; all oxydation is arrested in the blood as soon as alcohol is taken in large quantities. The cells of the body are abused and cannot do their duty until stimulated again with alcohol or until normal oxydation is resumed. Because alcohol causes rapid combustion, when normally it progresses slowly, the drunkard drinks and drinks again until all the cells of the organism are weakened, the stomach becomes inflamed, the intestines thin and the muscle-cells changed into fatty cells. The nerves can resist the longest because they are kept stimulated. They hold on at the expense of all the other organs. But woe to them when they do give way! the mind wanders, horrid pictures of crawling snakes, and the horrors of delirium haunt the drinker. Such is the consequence of constant alcohol combustion.

This leads us to ask the question: Why is there so much alcohol used? Are we as physicians at fault? Is it not one of the evils for which the medical profession ought to be held accountable? I say, yes. At the door of the physician who prescribes either alcohol or morphine lies the responsibility of making drunkards from the use of both these stimulants. This has become a serious evil both in this country and in Europe, so great as to call upon every well-wisher of humanity to sound the alarm.

A Mrs. C., from one of our large cities, came to me for treatment. She did not improve as rapidly as other patients and I could not account for it at first, but I soon discovered she was taking too much wine. She had every luxury, an elegant home, a kind husband, and every comfort that money could buy. I took dinner with her one day. I noticed she drank two wine-glasses of wine, and then I was certain her bad spells were caused by over-doses of both that and other liquors. Soon after they sent for me in haste. I found her wild in delirium, with two ser-

vants trying to keep her in bed. Here was a case of mania a potu in a woman, a terrible thing to think of. She was sick for some time, and her husband now, for the first time, had his eyes open and discovered bills at drug stores for wine, etc. We determined to keep it entirely away from her and try to have her reform as health returned. One day, while visiting her after she was able to sit up, she said "Doctor, I am a failure: What might have been the possibilities of my nature, if I had not been made a drunkard by our family physician. While young and at home I was delicate with low vitality, and our physician ordered wine. I took it, and the habit has grown upon me, and where am to-day? A wreck, and mother was made a morphine drunkard by the same physician." As she gained her health she tried to break off the habit, and I hoped she would, but, alas! I met her at one of our sea shore hotels and found that she ordered hot drinks in large amounts every night. How sad for her husband and friends! She had no children to inherit the sad consequences of a bad system of medical practice.

From the fact that alcohol consumes all oxygen, and is the means of arresting all normal oxydation, it is madness to give it for any disease. It appropriates a large amount of oxygen, and thus robs the patient for the time being of what he most needs. I am thankful to say that in all cases where a stimulant is needed we have it in electricity, a stimulant which leaves none of the terrible results that are caused by alcohol or morphine, and which will take the place of both. Having practised in some of our largest cities, many of my patients being women, I have had an opportunity of seeing some of the dire effects of both these drugs, cases that would make the stoutest heart quail, mothers, wives, daughters, husbands and sons, made drunkards from morphine and liquor by their family physician. Think of it, and wake up to the necessity of investigating a remedy that does not originate with the evil one, but is God's best and truest gift to man,—Electricity.

THE SOURCE OF NERVE FORCE.

The Journal of the Franklin Institute says: Mr. J. St. Clair Gray is the author of a view concerning the origin of a nerve force, which he is very judiciously endeavoring to verify by actual experiment. The author, starting from the assumption that this power had in it an electrical element, arrived finally at the conclusion that its source is to be sought for in the sulphur and phosphorus in the animal system.

It is well known that phosphorus exists in considerable quantity in the brain, and that sulphur is present in the liver, while an alkaline fluid is in constant circulation between them.

To determine the fact as to whether a combination of similar elements would generate an electric current, he constructed a cell containing caustic potassa, in which were placed sticks of sulphur and phosphorus. Chemical action very soon set in. The phosphorus was soon converted into an oily mass, the sulphur gradually wasted away at the point of contact with the former, while potassa salts were formed in the solution. The operation was attended with the evolution of phosphuretted and sulphuretted hydrogens.

The action seems to be very gradual, since we are informed that at the end of three months it was still going on. The presence of an electric current in the cell was conclusively established by the electrometer, the electromotive force being found to be superior to that of the Daniell cell.

Having thus established one fact in favor of his hypothesis, the author next proceeded to test its truth under the actual conditions of life. The leg of a frog was prepared as a galvanoscope, according to Galvani's directions. A rabbit was then chloroformed and through an incision in the abdomen an insulated copper wire was

introduced into the substance of the liver, and another similar wire passed through the optic forearm into the brain. The free ends of the wires were then brought into contact with the exposed nerve of the frog's leg, when powerful convulsions were produced in it; a very clear demonstration that an electric current does exist between the brain and the liver. From these the author infers that the source of the current is the action of the alkaline fluid on the sulphur and phosphorus in these organs; especially since he has shown, from his experiment with the cell conducted on this principle, that the combination of these elements is capable of generating a very powerful current.

The experiments are still being continued, and we shall doubtless soon be informed either that subsequent investigation has disproven this ingenious theory, or that the source of nerve-force is discovered. The very obvious objection that sulphur and phosphorus do not exist as such, but as compounds, in the liver and brain, must, of course, be considered as militating against the author's views, until it is shown to the contrary.

ELECTRICITY IN HORTICULTURE.

Not long since, quite an excitement was created over the experiments of Dr. Seimens in growing plants with the illumination of the electric light. He proceeded in his experiments with the idea that electricity might furnish all the requisites of sunlight in the development of plant growth.

More than ten years before this time, experiments had been made with the electric light in this direction, and it was found that this light, applied to plants in badly lighted places, resulted in a growth equal to that when plants had the benefit of sunlight.

Dr. Seimens made a sunlight of his own by placing an electric light of 1,400 candle power in the midst of

his plants, and at a distance of two meters, he found it equal to average daylight at the season of the year in which he was experimenting.

He found the results the same, so far as plant developments were concerned, as though the plants were under the direct influence of daylight. He found, more than this, the growth of vegetation was greatly accelerated. The electric light was found competent to produce all the mechanical effects of daylight, such as bringing about the re-erection of foliage plants that "sleep" at night, and that seedlings of mustard which had never seen daylight, were quite as green and vigorous.

The London *Daily News* says that Dr. Seimens exhibited to an audience before whom he lectured, a pot of tulips in bud, which the electric light brought into full bloom in some three quarters of an hour. Time and further experiments will demonstrate more fully the actual value of this discovery. Its application is limitless.

The application of electricity to plant growth is another of these grand experiments with this subtle life-power, as we may almost call it, going on to-day.

From the Journal of Phcycological Medicine, July, 1872.

Dr. Wm. A. Hammond quotes Dr. Francis E. Anstie, F. R. C. P., London, as saying:

"I am now fully able to speak with far greater assurance of the *positive value* of Electricity as a remedy for neuralgic pain. I shall make bold to say, that nothing but the general ignorance of the facts can account for the extraordinary supineness of the mass of English practitioners with regard to this question."

Dr. Hammond (referring to the above) then says:

"This is true of America. Many of our physicians know almost nothing of the *great benefits to be gained*

by this agent, and have a groundless scepticism of all that is said in its favor."

OPERATING BY THE ELECTRIC LIGHT.

From London *Lancet:* page 216.

"On the 11th inst., Mr. Berkeley Hill operated on vesico-vaginal fistula, in University College Hospital, while the vagina was lighted up by Mr. Coxeter's application of the glowing platinum. The apparatus consisted of a fine platinum wire twisted into a small knot. Through this knot was sent a continuous galvanic current, strong enough to maintain the wire at a white heat. A strong light was maintained for more than an hour, close to the margin of the fissure, without impeding the manipulations of the operator."

AUTOMATIC MEDICAL ELECTRICITY.

From Atlanta *Medical and Surgical Journal*, December 1879.

Dr. Francis Imlach, in the *Practitioner*, describes some very ingenuous and useful devices for the application of electricity to paralytics: "Take a hemiplegic patient, and, by automatic electric arrangement, make him raise the dragging limb as he walks, and stand as firmly upon it as upon the other." Dr. Imlach has a number of other arrangements, acting on the same automatic principle, by which various other forms of paralysis can be treated. His idea is evidently a good one, and will probably meet with much favor.

INDEX.

Anus, Prolapsus 224
Aphthæ or Thursh 110
Atrophy of Infants 114
Abcess in Antrum 242
Abcess of the Libia 121
Asphyxia 157
Arsenic, etc. 159
Asthma 194
Abdominal Diseases 204
Anthrax or Carbuncle 237
Alcohol and its effects 243
Batteries 74
Blood Circulation 102
Bronchitis 112
Bubo 147
Blood Poisons 148
Baths 164
Bronchocele or Goitre 168
Bursæ 240
Bunions 241
Burns 241
Boils 237
Cause of Poor Health of Girls 116
Children's Diseases 105
Constipation (children) 110
" (Adults) 219
Cholera Infantum 110
Cholera 213
Congestion of the Lungs 111
Croup 112
Cough, Whooping 113
Cutanious Diseases of the Genitals 136
Cancer 150
Cervix, Amputation 141
Cantharidies 159
Convalecence 165
Congestive Headache 169
Chorea, St. Vitus Dance 182
Consumption 192
Cystitis 200
Conjunctiva 233
Chilblains 240

Colic, Bilious 212
Colic, Painters' 212
Curvature of the Spine 236
Catarrh 167
Do Medicine and Electricity Harmonize 42
Diagnosing, Physical 51
Diagnosing, Electrical 55
Diseases of Women 119
Dysentery 110
Dysentery, Bloody Flux 226
Diarrhœa 111
Diarrhœa, Chronic 224
Diphtheria 113
Dentation 114
Dysmenorrhœa 126
Dyspepsia 206
Dropsy 226
Deafness 234
Electro Therapeutics 19
Electricity and Magnetism 33
Electric Pills 99
Extraction of Foreign Bodies 163
Erysipelas 152
Fractures and Dislocations 241
Fungus Growths 135
Fevers 187
Fistula 124
General Treatment 64
General Instructions 69
Gonorrhœa 146
Gleet 146
Gangrene 238
Hydatids and Moles 136
Hernia 145
Hereditary Diseases 148
Hydrophobia 153
Heart Disease 190
Hemorrhoids or Piles 223
Hypochondria 227
Hysteria 184
Is Electricity Life 39
Indigestion 111
Impotency 143
Improvised Instruments 165
Insanity 181
Insomnia or Sleeplessness 183
Inflamation 185
Introsusception 212
Jaundice 227
Kidneys 197
Kidneys, Bright's Disease 199
Liver 229
Lachrymal Duct 234
Leucorrhœa or Whites 124

Lumbago ---- 174
Lock Jaw or Tetanus ---- 180
Menorrhagia or Hemorrhage ---- 125
Melancholy ---- 227
Mortification ---- 238
Mercury ---- 159
Nymphomania ---- 120
Neuralgia ---- 171
Opium Poison ---- 159
Obesity, Excessive fat ---- 228
Pleurisy ---- 195
Pneumonia ---- 195
Purpura Hemorrhagica ---- 188
Paralysis ---- 176
Phymosis ---- 145
Prostate Gland ---- 145
Polypus ---- 140
Pyæmia ---- 161
Quinsy ---- 168
Questions and Answers ---- 13
Rheumatism ---- 178
Syphilis ---- 239
Sloughing ---- 238
Strictures of the Rectum ---- 221
Stammering ---- 182
Sciatica ---- 175
Skin Diseases ---- 160
Salt Rheum ---- 159
Salt or Cirodium of Sodium ---- 46
Spider or Snake Bite ---- 158
Scrofula ---- 156
Small Pox ---- 155
Satyrrasis ---- 144
Spermatarrhœa ---- 142
Tumors, Fibrous ---- 137
Tumors, Ovarian ---- 139
Tic Douloureux ---- 173
Toothache ---- 169
Tobacco Poison ---- 158
Talipes Equinus ---- 242
Treating Chair ---- 99
Uterus ---- 127
Uterus, Inflammation ---- 131
Uterus, Displacement ---- 127
Uterus, Procidentia ---- 133
Uterus, Ulceration ---- 134
Uterus, Dropsy ---- 140
Urin, Retention ---- 201
Ulceration ---- 238
Vagina, Prolapsus ---- 121
Vagina, Induration ---- 122
Vagina, Adhesions ---- 123
Vericrose Veins ---- 241
Worms ---- 222

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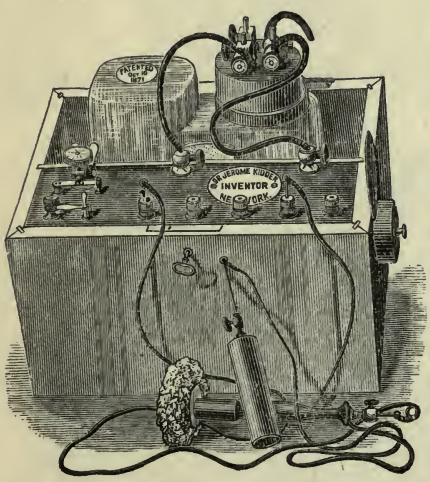

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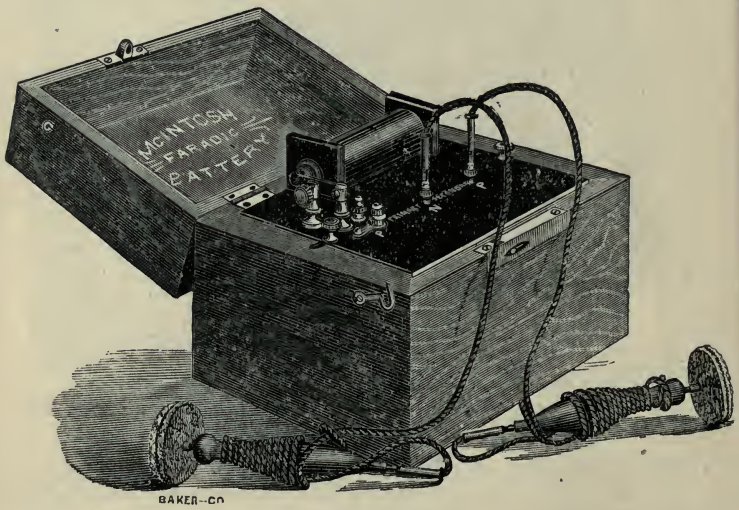

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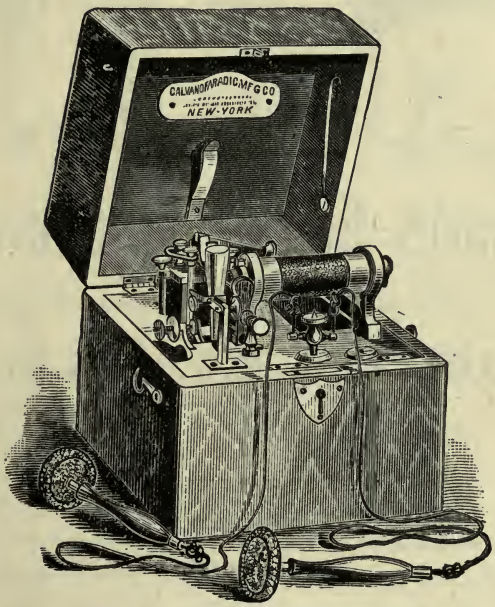

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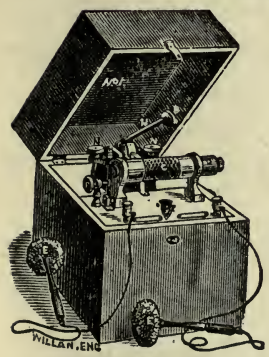

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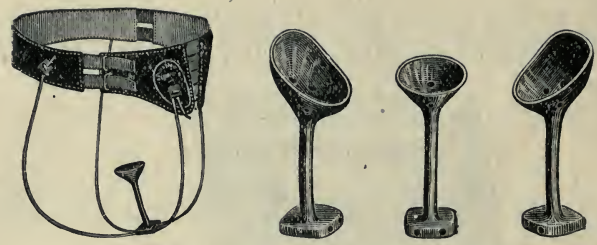

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